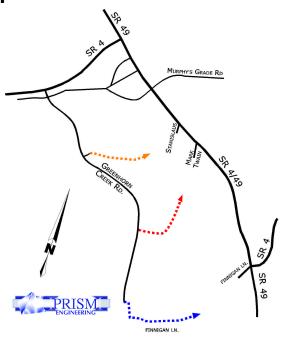


FINAL REPORT



Green Horn Creek Access Road Study In the City of Angels

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Executive Summary

This study examined the impacts/benefits of installing three different connector roads from Greenhorn Creek Road to existing City streets connecting into existing historical neighborhoods. The streets that potentially are impacted from the changes include Greenhorn Creek Road, Tuolumne Avenue, Gold Cliff Road, and Finnegan Lane (and all other roads in between that lead to Main Street). These connections are defined as follows:

- Access A: Sierra Ave to Tuolumne Ave
- Access B: McCauley Ranch Rd. to Gold Cliff Rd.
- Access C: Greenhorn Creek Rd. to Finnegan Lane

Several traffic engineering methods were employed in this study to determine the pros and cons of installing new connector roads. Capacity analysis was used at key study intersections to make a comparison between alternatives. Trip distribution assumptions (how traffic patterns would change with the connectors) were also fully documented in the analysis section of this report. Safety was also a primary factor.

Although the change in traffic patterns did not create a capacity problem on any of the streets (in fact, it helps to reduce impacts at key intersections), there is concern over safety relating to the increased traffic activity that is expected to take place along residential roads if the connectors were put in. In order to mitigate the potential safety issue of increasing two-way traffic on narrow residential roads, it is recommended that the existing streets along the path of Gold Cliff/Hillcrest/Mark Twain Road be improved to the City's standard 24 foot road width. This will allow for the safe passage of two-way traffic, and increase traffic safety for those that already live on these streets.

It is the conclusion of this study that the connector roads will provide more benefit to the City and its residents than it would create impacts. The impacts can be overcome with the widening of certain roads to City standards, and with the eventual installation of additional traffic signals along Main Street to accommodate cumulative growth on Main Street. The signals will provide a way for the existing residents to even get out onto Main Street. The connector roads provide some relief to existing residents in the short term as traffic congestion on Main Street continues to increase in the future. As Main Street volumes keep going up, it will become increasingly more difficult to get out of the neighborhood. The connector roads address this real and growing circulation problem.



The connector roads will also provide a more direct access to Main Street for residents living along Greenhorn Creek Road. As drivers shift some traffic patterns with new circulation opportunities, the congestion along Main Street is expected to reduce as is shown in the analyses section of this report. Main Street at Murphy's Grade Road, for example, is expected to improve from LOS D to LOS C in the future as traffic patterns are allowed to go a more logical and direct route with the connector roads. There will be reductions on Main Street traffic from residents in the historical areas who can more easily travel west and north if they are allowed to use Greenhorn Creek Road instead of Main Street. There will also be reductions on Main Street traffic if Greenhorn Creek Road residents are allowed to more easily travel east and south on SR 49.

Although in each case, these numbers are fairly small, they do help to reduce the critical congestion areas along Main Street by at least 10%, and this is equivalent to an improved grade in level of service (LOS D to LOS C, for example). If even more reductions on Main Street are realized by existing historical area residents making trips to the west and north along Greenhorn Creek Road as is expected, then the benefits to Main Street may be as high as 20% reductions. In this report, a worst-case analysis was assumed so as to not be overly optimistic on the benefits of the connector roads. Even with the worst-case assumptions, the benefits are significant, and outweigh the impacts (which can be mitigated with the bringing of certain roads into compliance with City standard cross section width of 24 feet).

Recommendations

- The City should install at a minimum, Access B Connector Road to improve traffic flows and patterns in the City.
- The City should improve Gold Cliff/Hillcrest/Mark Twain Road to be a uniform 24 foot cross section of paved road to allow for safe passage of two-way traffic.
- The City should eventually install a signal at Main Street and Mark Twain Road to allow traffic to get out onto Main Street.
- Ideally, the City should install all three access connector roads A, B, and C to spread the load of traffic to more streets, and reducing impacts to all roads.

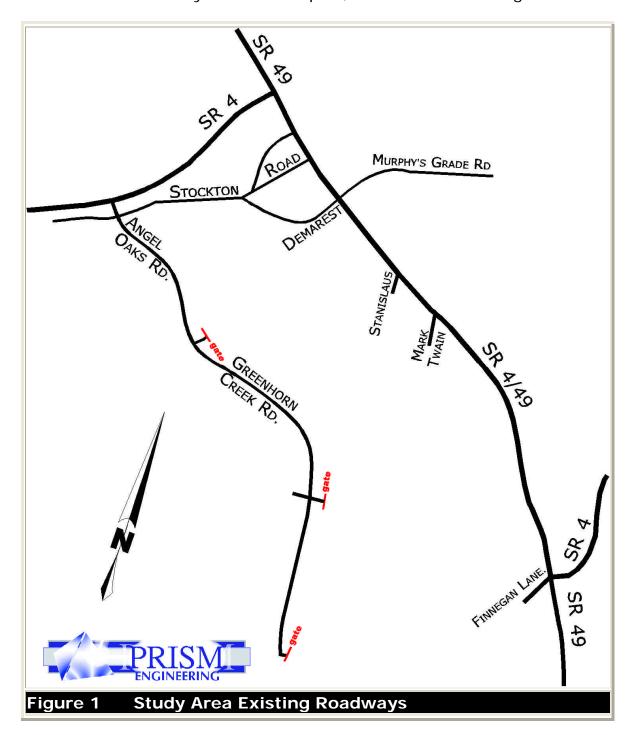
¹ The traffic patterns of the existing residents in the historical residential areas was assumed to not change with the new connector road installations. Although this is not realistic, it does give the "lower end" of benefits in this report. The benefits are actually expected to be higher than shown in this report.



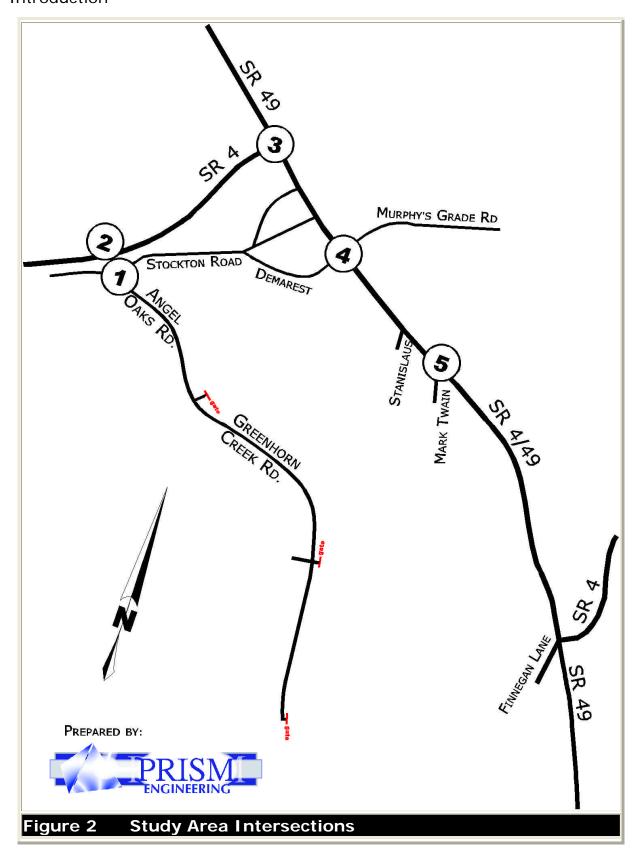
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Introduction

The purpose of this study is to examine the impacts of installing additional connector roads to enhance circulation options in Angels Camp. The primary collector streets in the study area are shown in Figure 1 below. Five study intersections were analyzed in this report, and are shown in Figure 2.









These five study intersections provide a means to compare alternatives for benefits or impacts relating to the changing of circulation patterns in the study area.

In this study, six scenarios were examined for the proposed Green Horn Creek Access Road alternatives. These scenarios are related to the connection of Greenhorn Creek Road to City streets to the east of Greenhorn Creek Road, for the purpose of relieving traffic impacts to Angels Camp at the SR 4/49 signalized intersection, and other intersections along Main Street (SR 4/49) in Angels Camp.

The current circulation system in Angels Camp has no connections to the newer subdivisions to the west of Greenhorn Creek Road. All inbound and outbound traffic from these hundreds of homes is forced to travel north on Greenhorn Creek Road / Angel Oaks Drive to travel to SR 4 to gain access to other parts of Angels Camp. A significant portion of this traffic is using Stockton Road as a short cut path to bypass the SR 4/49 intersection. However, this option is limited as the proximity of the Main Street and Stockton Road intersection to the Main Street and Murphy's Grade intersection is approximately 500 feet (this close spacing can create traffic operations issues, as the traffic queues on Main Street often exceed this distance in the southbound direction).

Because of these traffic queues and congestion, the City has desired to see if there could be any benefit to providing additional circulation opportunities between Greenhorn Creek Road and areas to the east of Greenhorn Creek Road in an effort to reduce impacts along Main Street, etc. This study examines the transportation benefits and impacts associated with these circulation changes.

Existing Setting

The main streets in the City of Angels are the State-owned and operated arterial roadways known as State Route (SR) 49, and SR 4. These two highways operate as City arterial streets within the City, having signals and stop sign control at key intersections, and they carry the most traffic of any street in the City. Current traffic volumes along SR 49 in the City of Angels are at 16,800². average daily vehicles (ADT) The peak daily volume is 17,400 ADT, and the peak hour volume is averaging 1,750 vehicles per hour. These levels of traffic volume are high for a city downtown street, where there is only one lane in each direction. Traffic volumes continue to grow, and the impacts to the City streets are getting worse.

The existing roadways in the study area are described in the following paragraphs. Figure 3 is a photo documentary of key locations on these streets and their intersections.

Angel Oaks Drive:

This collector level street begins at SR 4 on the north and continues southerly until it becomes Greenhorn Creek Road just past Live Oak Drive. There are curbs with some sidewalks along this street. Residential development exists along the street throughout, and other small collector roads feed into this main collector road. There is some slight vertical curvature (rolling hills terrain).

Greenhorn Creek Road:

This collector level street takes over where Angel Oaks Drive leaves off. They are in fact the same street but the street name changes at Live Oak Drive. At its south end (near Finnegan Court), there is a fence/barricade to end the road. Much of the road has a landscaped median, and there are curbs on the east edge of the road and sidewalks on the west edge of the road. There are street connections for residential development along the street throughout, and other small collector roads feed into this main collector road. There is some slight vertical curvature (rolling hills terrain).

Mark Twain Road:

This is a two lane collector roadway connecting Main Street to residential areas to the west of Main Street in downtown. Mark Twain has a stop sign

² Source: Caltrans Traffic and Vehicle Data Systems Unit, 2004 All Traffic Volumes on CSHS



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control at Main Street, but Main Street is uncontrolled. There is a left turn pocket on Main Street that provides access into Mark Twain, and there is a two-way left turn lane in the median of Main Street immediately to the north of the Mark Twain intersection. This allows for easier access of Mark Twain traffic onto Main Street when turning left to go north on Main Street.

Murphy's Grade Road:

A two lane arterial roadway connecting Main Street (SR 4/49) with City and County destinations to the east. This road carries significant levels of traffic to and from the Main Street corridor, including high school related traffic. The roadway cross section varies from three lanes (there is a median two-way left turn lane in vicinity of Bret Harte High School) with curbs and sidewalks, to two lanes after passing the school and approaching Gardner Lane. After Gardner Lane, Murphy's Grade Road has no curbs, sidewalks or shoulders. This road eventually connects to SR 4 on east end.

State Route (SR) 4:

This State owned facility is a two lane rural highway connecting west County with East County, and having a break in route through the City of Angels (SR 49 connects SR 4 on north with SR 4 on south end of City). Extending west from SR 49, this highway has edge lines with ample shoulder on each side to accommodate parking, etc. This rural highway also connects to Angel Oaks Drive.

Main Street (State Route 4/49):

This State-owned facility is a three lane rural highway (one lane in each direction, with a two-way left turn lane in the center median) in the study area. It has edge lines with ample shoulders on each side of the road to accommodate parking, etc. Traffic is uncontrolled from the north City Limit to the SR 4 intersection where a signal is installed. The next signalized intersection is at Murphy's Grade Road.



Angel Oaks Drive looking south from SR 4 to Stockton Road intersection



Stockton Road facing east from Angel Oaks Drive



Stockton Road facing west from Angel Oaks Drive



Angel Oaks Drive facing north To Stockton Road and SR 4 intersections



Greenhorn Creek Road facing south just before Sierra fire exit (left turn pocket)



Facing east to Sierra Fire Exit "A" from Greenhorn Creek Road intersection

Figure 3A Study Area Intersection Approach Photos





Greenhorn Creek Road facing south at Fire Exit "B" intersection (Golf Course on right)



Greenhorn Creek Road facing north at Fire Exit "B" intersection (Golf Course on left)



Facing east on Fire Exit "B" from Greenhorn Creek Road intersection



Facing south at end of Greenhorn Creek Road near Finnegan Road connector



Facing north on Greenhorn Creek Road from south end at Finnegan connector



Finnegan Road facing east to SR 4/49 intersection

Figure 3B Study Area Intersection Approach Photos





SR 49 looking south to SR 4 signalized intersection



SR 4 looking east to SR 49 signalized intersection



SR 49 looking north to SR 4 signalized intersection



SR 49 looking south at Murphy's Grade signalized intersection



SR 49 / SR 4 facing south to Mark Twain intersection



SR 49 facing south to SR 4 intersection with Finnegan on right

Figure 3C Study Area Intersection Approach Photos



Access Connector Road Scenario Descriptions

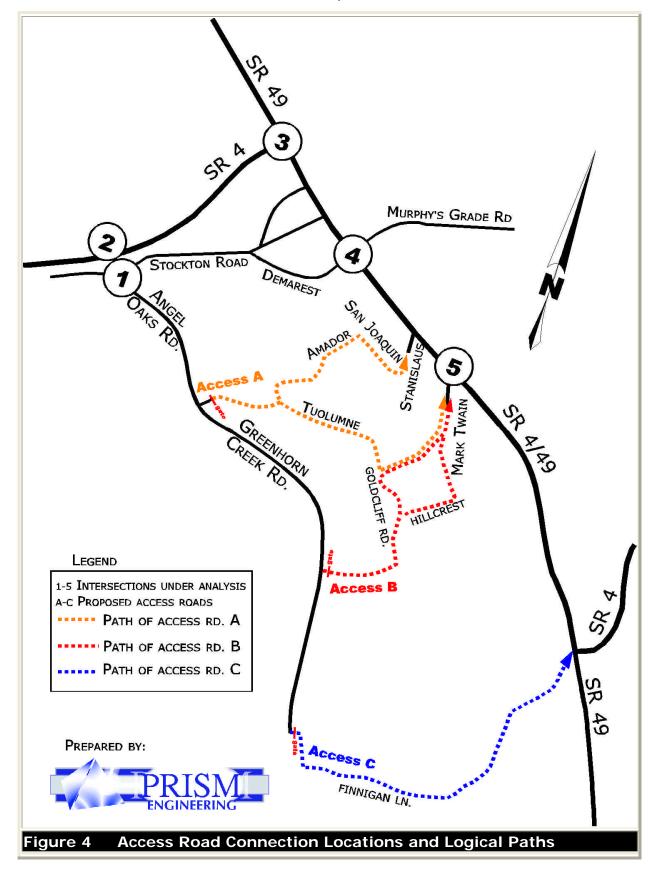
Six different scenarios were examined in this study to determine how traffic patterns might change if new access roads are connected to the east from Greenhorn Creek Road in the future. Currently there are three fire road access gates installed along Greenhorn Creek Road from Live Oak Drive on the north to its south end (a barricade fence). Figure 4 shows the location of the three potential access roads and where they connect to Greenhorn Creek Road.

These six specific scenarios are described below:

- 1. Connect Access Road A to Greenhorn Creek Road
 - This connection would take place as shown on Figure 4 and would provide access directly to Tuolumne Avenue, providing connections to Main Street via Stanislaus or Mark Twain.
- 2. Connect Access Road B to Greenhorn Creek Road
 - Traffic using this connection would primarily travel to the Mark Twain / Main Street intersection.
- 3. Connect Access Road C to Greenhorn Creek Road
 - Traffic using this connection would travel to the Finnegan / Main Street intersection.
- 4. Connect Access Roads A and B to Greenhorn Creek Road
 - o The combination of these two connectors provides additional opportunities to spread the traffic load more uniformly to Stanislaus and Mark Twain intersections with Main Street. It also lessens the impacts to any one of the existing neighborhood streets relating to the opening of these connectors.
- 5. Connect Access Roads B and C to Greenhorn Creek Road
 - The combination of these two connectors provides additional opportunities to spread the traffic load more uniformly to Mark Twain and Finnegan intersections with Main Street.
- 6. Connect Access Roads A, B, and C to Greenhorn Creek Road
 - This scenario is best because it spreads the traffic load that would travel to Main Street and reduces the impacts to the local neighborhood surface streets.

The analysis will show that spreading the load to three connectors reduces the delay to Main Street intersections, and lessens the impacts to neighborhood streets. The alternative that has the strongest traffic attractions over the others is the connector at the midpoint of Greenhorn Creek Road (Access B).







Analysis of Alternative Scenarios

Six alternative scenarios were analyzed for impacts and ramifications due to the local and regional traffic pattern shifts relating to any one of the alternatives. The methodology for analysis includes analyzing the level of service at various study intersections, reporting pm peak hour volume changes on various street segments, and trip distance impacts, etc. The HCM Unsignalized Report is based on the HCM 2000 Chapter 17. In addition, the SynchroPro model provides a full implementation of the HCM 2000 Signalized Operations method. These are the only methodologies reported in this study (HCM 2000 is one of the more conservative methods).

Intersection levels of service can be measured in terms of volume to capacity ratio, and a corresponding rank of level of service as follows:

LOS A < 0.60

LOS B > 0.60 and < 0.70

LOS C > 0.70 and < 0.80

LOS D > 0.80 and < 0.90

LOS E > 0.90 and < 1.00

LOS F > 1.00

Table 1 summarizes what the level of service would be at an unsignalized or signalized intersection given varying degrees of delay to motorists at the intersection. As can be seen from the table, the amount of tolerable delay decreases with unsignalized intersections because the perceived anticipation to get through the unsignalized intersection quicker is greater than at a signalized intersection where people generally accept that delays will occur.

Table 1, Delay Level of Service Criteria

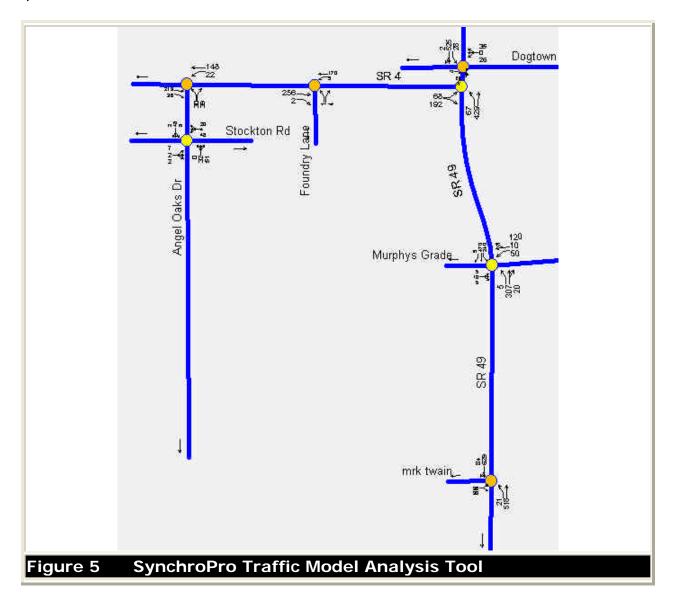
LOS	Unsignalized	Signalized
A	1-10 seconds	1-10 seconds
В	11-15 seconds	11-20 seconds
С	16-25 seconds	21-35 seconds
D	26-35 seconds	36-55 seconds
E	36-50 seconds	56-80 seconds
F	51+ seconds	81+ seconds

Source: PRISM Engineering, Synchro Pro, and HCM

A traffic model analysis tool, SynchroPro and SimTraffic was set up for this analysis. Figure 5 shows the extent of this tool, which replicated the existing year 2005 and future year 2025 volumes along the main City streets



in the study area for the six different connection scenarios described in the previous section.

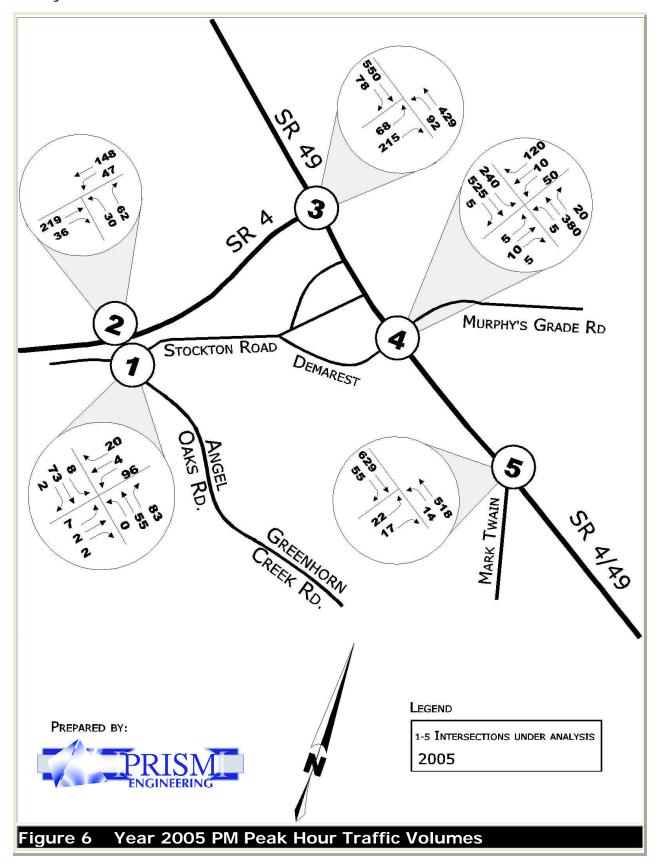


Our analysis included the use of this tool to assign traffic and determine "HCM compatible" levels of service for each of the five study intersections.

Figure 6 shows the pm peak hour Year 2005 traffic volumes (taken and developed by PRISM Engineering) for the five study intersections. including:

- 1. Angel Oaks Drive at Stockton Road
- 2. SR 4 at Angel Oaks Drive
- 3. SR 49 at SR 4 (signal installed)
- 4. Main Street (SR 49) at Murphy's Grade Road (signal installed)
- 5. Main Street (SR 49) at Mark Twain Road





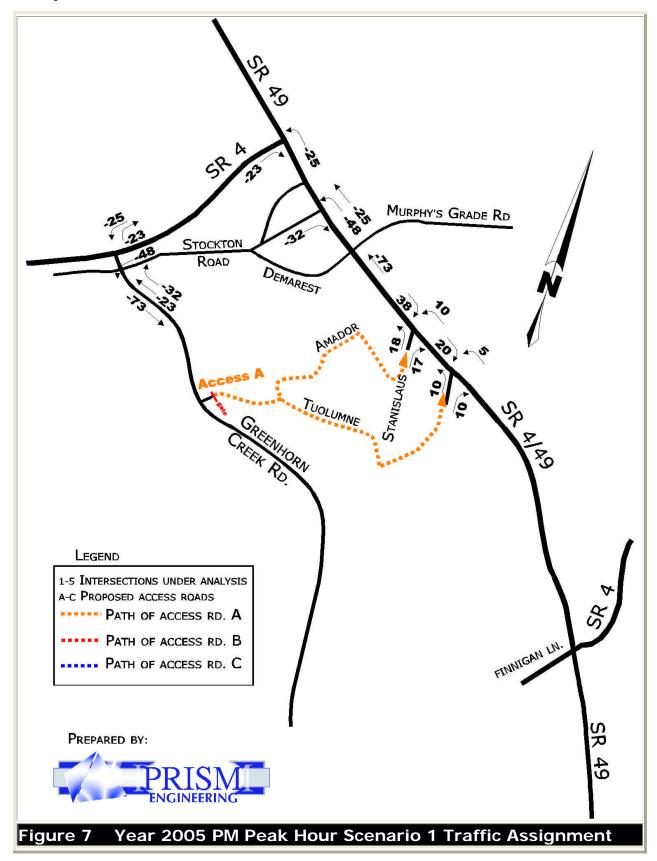


PRISM Engineering conducted new am and pm peak hour traffic counts at the intersections of Angel Oaks Drive at Stockton Road and at SR 4. In addition, new am and pm counts were taken at the intersection of Main Street and Mark Twain Road. These new counts were used to update (as necessary) the counts at study intersections 3 and 4.

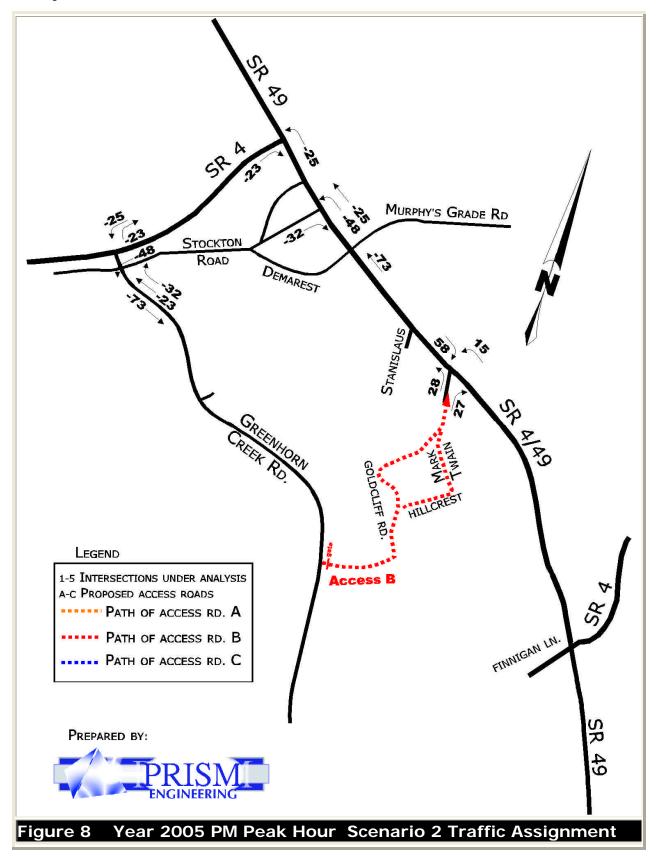
Table 2 reports the various average delays and corresponding levels of service for the five study intersections, for the Year 2005 existing conditions (shown in Figure 6), as well as when proposed circulation access scenarios 1 through 6 are implemented (Figures 7, 8, 9, 10, 11, and 12).

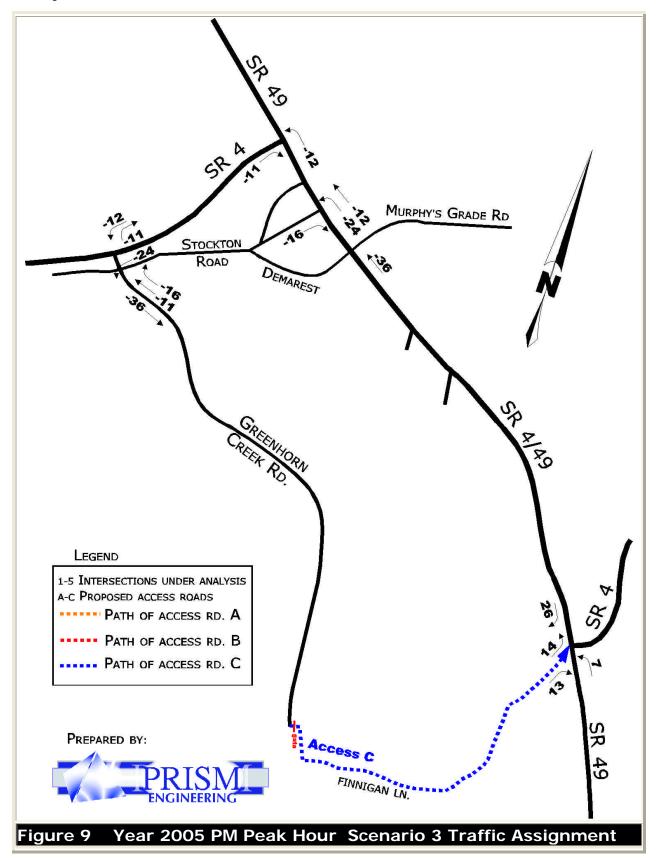
Figure 7 shows the traffic assignment when one connector (Access A) is opened up from Greenhorn Creek Road. The pm peak hour traffic volumes are shown on the figure that represent the shift in traffic that was expected to take place. PRISM Engineering determined that approximately 80% of traffic using Greenhorn Creek Road / Angel Oaks Drive would have destinations to the east (towards downtown Angels), and 20% had destinations to the west along SR 4. A significant amount of traffic is using Stockton Road as a shortcut/bypass to using SR 4 and having to pass through the signalized SR 4/49 intersection (and potentially wait at the signal). At the current time, this traffic pattern works, but as traffic grows along Main Street in the future, it is expected that this shortcut will grow unattractive when vehicles can no longer easily enter or exit Stockton Road from Main Street. If no other alternative circulation options are given (such as Scenarios 1-6), the traffic situation will grow worse in the future. This is verified in Table 2 which shows that when the circulation option(s) are put into place, the average delay at each of the study intersections is reduced. This is even more apparent in the Year 2025 scenario covered in the next chapter.

As can be seen from the table, all intersections would operate at an LOS B or better conditions overall, regardless of the scenario. Since the purpose of this study was to examine the impacts of shifting traffic from the SR 4/49 route to local surface streets, it was important to measure the amount of increased delay that this change could have on the traffic trying to get out to Main Street from Mark Twain Road, etc. For this reason, the side street delay and level of service is reported for Mark Twain Road since it is stop sign controlled and Main Street is uncontrolled.

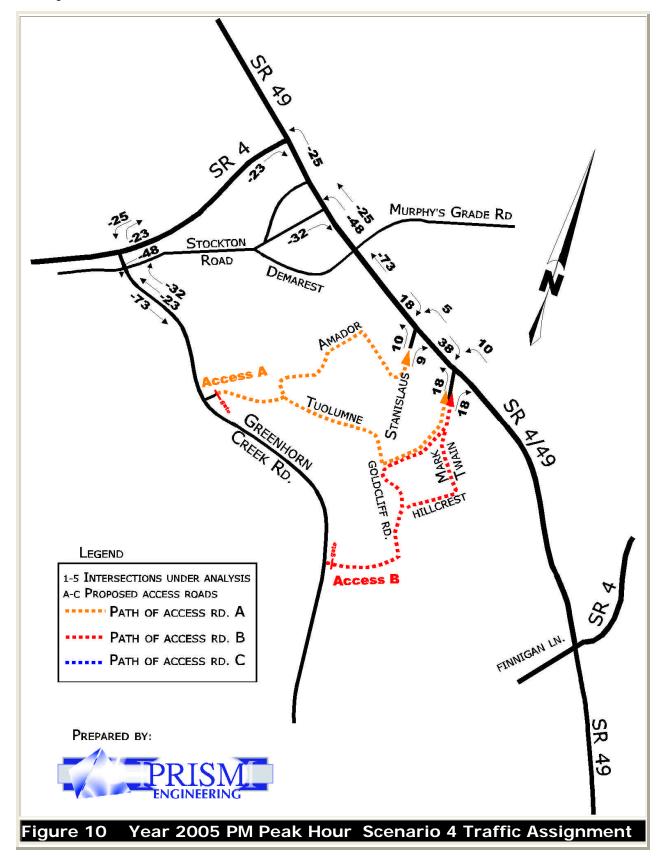




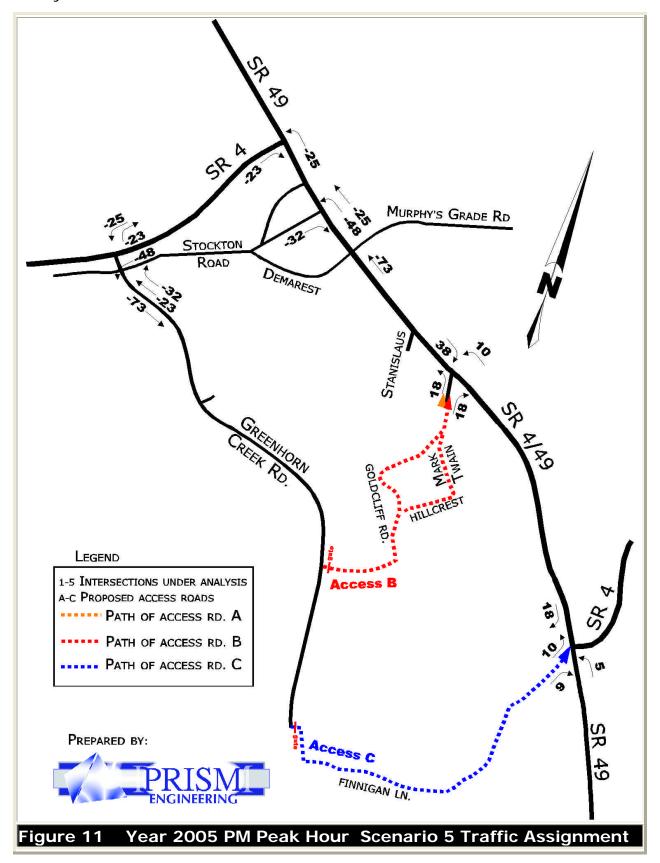














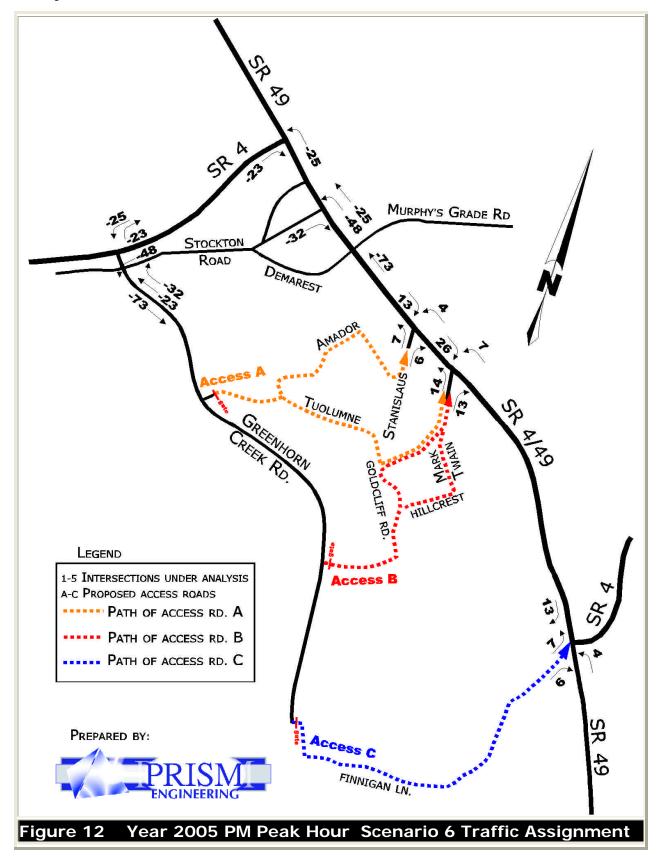




Table 2

Intersection Level of Service Analyses Summary for Year 2005
PM Peak Hour Scenarios

Year 2005 Scenarios	No Access Options		Access Road A		Access Road B		Access Road C		Access Roads A&B		Access Roads B&C		Access Roads A,B,&C	
Intersection	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 Angel Oaks and Stockton Road	4.1	Α	3.8	Α	3.8	Α	3.9	Α	3.8	Α	3.8	Α	3.8	Α
2 SR 4 and Angel Oaks Road	2.5	Α	1.8	Α	1.8	Α	2.5	Α	1.8	Α	1.8	Α	1.8	Α
3 SR 4 and SR 49	12	В	9.9	Α	9.9	Α	10.8	Α	9.9	Α	9.9	Α	9.9	Α
4 SR 49 and Murphy's Grade Road	16.3	В	15.6	В	15.6	В	15.9	В	15.6	В	15.6	В	15.6	В
5 SR 49 and Mark Twain Road*	22.8*	C*	26.5*	D*	35*	D/E*	24.7*	C*	30.1*	D*	30.1*	D*	28*	D*

^{*}This only represents the side street Delay and LOS

Source: SynchroPro Software output, based on City's traffic volumes and projections (see appendix)



Future Year 2025 Conditions

The future conditions scenarios introduces several new variables to the transportation outlook including the SR 4 Bypass, future growth of Greenhorn Creek development, and regional growth traffic showing up on the highways. These factors were accounted for in the intersection capacity analyses. Traffic volumes utilized for the year 2025 pm peak hour condition scenario are given in Figure 13. The specific lane configurations used at each intersection are given graphically in the appendix for each intersection approach.

Our analysis took into account the additional growth that is expected to come from Greenhorn Creek Road, and we assigned this traffic globally to the street system using a growth rate factor from year 2005 to year 2025 of 1.76³. These growth rates were applied to the existing traffic as well as to the Greenhorn Creek development that has yet to fully build out. The residential subdivision along Greenhorn Creek is estimated to be at about 60% built out, making the 1.78 factor appropriate to also represent the growth needed to build out.

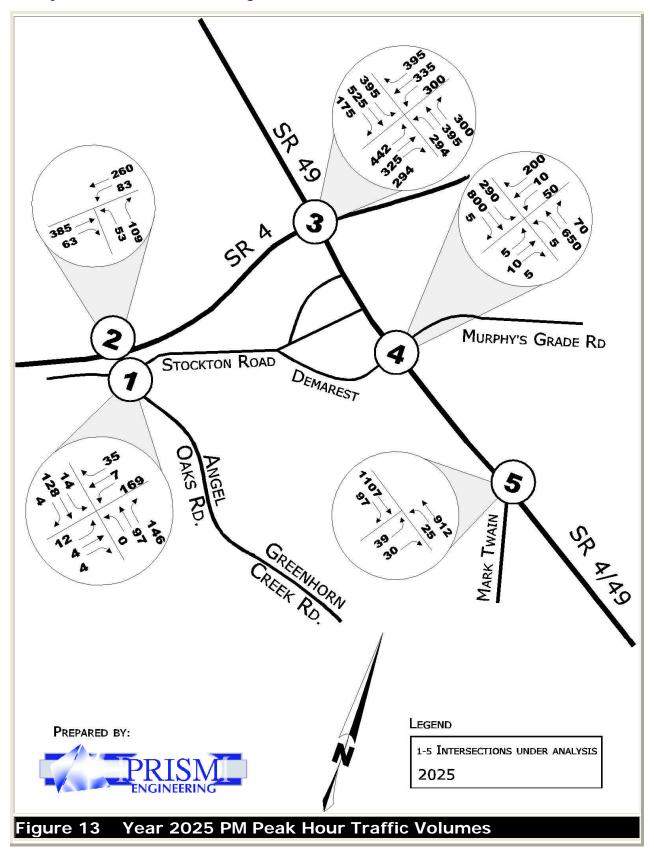
Another factor that will help to reduce traffic volumes along Main Street south of the SR 4 intersection is the SR 4 Bypass extending southeast from SR 49 (scheduled to begin construction in the next few years). The capacity analysis for the year 2025 time frame is summarized in Table 3. The same traffic assignment pattern illustrated in Figures 7-12 was also used in the year 2025 analysis, but the volumes from Greenhorn Creek Road that were shifted were increased by the factor of 1.78 to bring volumes up to a year 2025 level and to reflect the remaining 40% growth potential. This traffic pattern shift was then added to the year 2025 traffic projections to get a total volume for each of the six scenarios. The results of the year 2025 analyses are summarized in Table 3.

Table 3 shows that under all scenarios if the connector road(s) are set in place, that there would be significant improvement to average delays at the intersection of Main Street and Murphy's Grade Road (improving from 42.4 seconds of average delay to 30.2 seconds). This would reduce congestion on Main Street at Murphy's Grade Road from LOS D to LOS C conditions. For this reason, the City should implement the road connectors because it will directly provide overall relief to one of the busiest and overloaded intersections in the City.

³ This was calculated using the year 2025 growth projections and dividing by the year 2005 traffic turning movement totals.



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Neighborhood Impacts and Benefits

It is understood that any increase in traffic to neighborhood streets is not a welcome impact to the people who live on those streets. However, it is important to note that when circulation opportunities are increased, the shifting in traffic patterns may not be all negative impacts. It is possible that even reduced volumes are possible at certain locations when shorter trips are made. The streets that stand to be potentially impacted by some of the traffic from Greenhorn Creek Road residents if the connector road(s) are installed include Tuolumne Avenue, Amador Avenue, San Joaquin Avenue, Stanislaus Avenue, Gold Cliff Road, Hillcrest Street, Mark Twain Road, and Finnegan Lane. The existing traffic volumes on these streets are small because the streets serve only the local residents who live on them.

If the connector roads installed to allow traffic to go back and forth between the two residential areas (the older historic area to the east of Greenhorn Creek Road, and the newer homes to the west of Greenhorn Creek Road), it stands to reason that traffic will go both directions, or in other words, both residential areas will benefit from additional circulation opportunities. only will traffic from the new residential areas travel easterly to destinations within the City along Main Street, etc., but traffic from the historical residential areas will be able to travel westerly to Greenhorn Creek Road and then north to SR 4 essentially bypassing the Main Street congestion entirely when they need to make a trip to say, Copperopolis, Stockton or even San Andreas, for example. The connector roads can also serve as a "bypass" of Main Street congestion for residents living in the historical neighborhoods as well when they need to make a longer trip to destinations west of the City. No longer would a resident living on Gold Cliff Road or Tuolumne Avenue need to travel to Mark Twain or Stanislaus Avenue to enter Main Street when they need to go to Stockton (or to future shopping areas along Angel Oaks Drive when it is extended north in the future). The traffic growth along Main Street, and the congestion that goes along with that growth can be avoided by the residents living in the historical areas.

Overall, the connector roads provide better circulation opportunities for the whole City, and do not *only* benefit the newer neighborhoods. They will benefit the historical neighborhoods as well, and thus further reduce some impacts that the historical residential areas make on Main Street when residents need to make a trip to the west or north (depending on how close to Greenhorn Creek Road they live).

In order to better compare the connector road alternatives in an LOS analyses we assumed a "worst-case" scenario examining traffic impacts that might occur along Main Street intersections if the connector roads were used



primarily by residents of the Greenhorn Creek Road corridor only. Through this analysis it was possible to see that the connector roads will have the effect of lowering volumes along Main Street and improving levels of service to downtown streets. Even though the delay for traffic entering Main Street from the historical residential area streets such as Mark Twain Road increased, the increase in delay did not fail the intersection, but only slightly increased the current traffic delay for side street traffic (increasing delay for Mark Twain traffic from 22.8 seconds to 24.7 on up to 35 depending on the alternative). This is still tolerable for the existing year 2005 condition. In the year 2025 condition, however, the traffic volumes along Main Street nearly double, and the side street traffic on say, Mark Twain Road, is unable to get out onto Main Street even without the connector road traffic. Only a signal will mitigate this LOS F condition for the side streets. Table 3 shows that there is projected to be a delay of 293 seconds for Mark Twain Road traffic getting out onto Main Street in the year 2025. This 5 minute average delay is intolerable and will require mitigation with a signal.

It is likely that as residents of the older historical neighborhoods use the connector roads to make all trips to the west of Angels Camp (via Greenhorn Creek Road to SR 4), that the City will see even further reductions to traffic volumes on Main Street (estimated at between 5% and 10% reductions) over existing and projected year 2025 conditions. This could result in an even better level of service than is shown in Tables 2 and 3 for all intersections along Main Street.

Traffic Calming

The existing streets in the older historical residential neighborhoods are narrow, and as a result, have traffic calming effects "built in" to slow traffic. Because of these narrow roads it is not anticipated that any exchange in traffic via connector roads between the two separated residential areas will result in any significance of speeding vehicles. Some roads may need to be widened to a 24 foot width to better provide for two-way traffic flows.

Gold Cliff Road/Hillcrest/Mark Twain is the most logical direct path between Greenhorn Creek Road and Main Street. If this path is improved to a 24 foot width as one of the connector road improvement projects, the other roads (Tuolumne and Finnegan) would not need to be improved to handle any additional traffic. The Gold Cliff/Hillcrest/Mark Twain route would have ample capacity to handle all traffic that might shift with connector road installations. The other two paths along Tuolumne and Finnegan would keep traffic volumes lower because of "built in" traffic calming effects such as narrow cross section and extreme horizontal curvature.



Table 3

Intersection Level of Service Analyses Summary for Year 2025
PM Peak Hour Scenarios

Year 2025 Scenarios		No Access Options		Access Road A		Access Road B		Access Road C		ess s A&B	Access Roads B&C		Acc Roa A,B	ads
Intersection	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 Angel Oaks and Stockton Road	5.4	Α	4.3	Α	4.3	Α	4.4	Α	4.3	Α	4.3	Α	4.3	Α
2 SR 4 and Angel Oaks Road	3.3	Α	2.3	Α	2.3	Α	3.3	Α	2.3	Α	2.3	Α	2.3	Α
3 SR 4 and SR 49	43.3	D	41.8	D	41.8	D	42.7	D	41.8	D	41.8	D	41.8	D
4 SR 49 and Murphy's Grade Road	42.4	D	30.2	С	30.2	С	30.2	С	30.2	С	30.2	С	30.2	С
5 SR 49 and Mark Twain Road*	293	F*	569*	F*	1000+*	F*	338*	F*	884*	F*	884*	F*	700*	F*

^{*}This only represents the side street Delay and LOS

Source: SynchroPro Software output, based on City's traffic volumes and projections (see appendix)



Conclusions and Mitigations

The SR 4/49 intersection was assumed to be significantly mitigated by the year 2025 with a new bypass constructed easterly of the intersection to take through traffic around the City. It is important to note that although this bypass takes SR 4 traffic around the City, there will still be growth of traffic volumes along Main Street from cumulative traffic growth in the area. Also assumed for improvements was significant widening at the SR 4/49 intersection to accommodate dual left turn pockets, etc. to handle the increase in traffic over the next 20 years.

Additional Signalized Intersections Needed

Currently there are two signals on Main Street, one at SR 4 and the other at Murphy's Grade Road. These signals help to move traffic more efficiently through the intersections. With future growth the intersection of Main Street and Murphy's Grade Road will go from LOS B/C today to LOS D by the Year 2025, even with the SR 4 Bypass installed. For this reason, it is necessary to find other ways to reduce unnecessary traffic impacts to Main Street. The installation of new connector access roads from Greenhorn Creek Road to the historical residential areas will allow for increased traffic circulation opportunities. Residents who live along Greenhorn Creek Road will be able to travel more directly easterly to Main Street when needed, and residents who live in the historical areas will be able to travel more directly westerly and northerly to SR 4 and beyond (especially when Angel Oaks Drive is extended in the future to SR 49).

The current side street delay for Mark Twain Road is an average of 22.8 seconds per vehicle during the pm peak hour. If the connector roads are installed, this delay is expected to increase (if the historical residents do NOT change their traffic patterns) by a range of 24.7 seconds of delay to a high of 35 seconds of delay, depending on the scenario (see Table 2). Although this is still not unusually high delay, the City needs to plan for a signal installation at this intersection in the future. By the year 2025 the delay without any connectors will be LOS F at 293 average seconds, or nearly five minutes per vehicle. A signal will be needed and should be planned.

The same is true for other intersections along Main Street such as Stanislaus Avenue and Finnegan Lane. These side streets will experience intolerable delays in the future as traffic grows along Main Street and makes it increasingly more difficult for traffic to get out. A traffic signal is the logical mitigation and is recommended for these three intersections in the future.

Road Widening Needed

If the connector roads are installed, then traffic patterns will shift. Some of the residents in the historical areas will make trips to the westerly through the residential streets to get to Greenhorn Creek Road, and some of the residents in the Greenhorn Creek area will make trips easterly through the residential streets to get to Main Street. This shifting in traffic flows will increase the number of vehicles that pass each other going opposite ways along say, the Gold Cliff/Hillcrest/Mark Twain route. This will require that the roads be brought to City standard cross section of 24 feet.

Since the volumes are low, even with the projected shift in traffic volumes, capacity is not the issue for the historical residential streets. The primary reason for the recommendation to widen certain roads is safety. Since there will be more two-way traffic on the roads, the need for wider cross section is increased. It is recommended that the entire road segment of Gold Cliff/Hillcrest/Mark Twain Road from Access B connector road to Main Street be improved to a 24 foot cross section.

Recommendations for Short Term

- 1. Install "Access B" Connector Road to Gold Cliff Road.
- 2. Widen entire road segment of Gold Cliff/Hillcrest/Mark Twain Road from Access B connector road to Main Street to a uniform 24 foot cross section to allow for safe passage of two-way traffic.
- 3. Install "Access A" Connector Road to Tuolumne Avenue.
- 4. Install "Access C" Connector Road to Finnegan Court/Lane.

Recommendations for Long Term

- 5. Install signal at Main Street and Mark Twain Road.
- 6. Consider installing signals on Main Street at Stanislaus Avenue
- 7. Consider installing signals on Main Street at Finnegan Lane



Appendix, Input Data and Sample Calculations

New AM and PM Peak Hour turning movement counts at study intersections

							31							
													13-Ap	Start Date
											ks	Angel Oa	SR 4 at A	Site Code
		nd	eastbou	Stocktor	bound	aks northi	Angel Oa	ınd	westbou	Stockton	bound	aks south	Angel Oa	Street Nan
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Start Time
70	0		0	0	0	9	24	20	0	4	5	8	0	4:00 PM
80	0		1	0	0	17	17	19	0	1	6	18	1	4:15 PM
81	0		1	0	0	16	20	18	0	8	4	14	0	4:30 PM
85	0		1	0	0	18	15	26	0	7	2	16	0	4:45 PM
78	0		0	0	0	7	25	19	0	4	3	20	0	5:00 PM
54	0		0	0	0	3	11	18	1	5	3	13	0	5:15 PM
80	0		0	0	0	9	21	19	0	7	5	19	0	5:30 PM
87	0		0	1	0	15	19	30	0	2	3	16	1	5:45 PM
324	0		3	0	0	58	77	82	0	20	15	68	1	
												pr-05	13-A	Start Date
											ks			Site Code
		nd	eastbou	Stocktor	bound	aks north	Angel Oa	ind	westbou	Stockton				Street Nan
		Left	Thru	Right	Left		Right	Left	Thru		Left			Start Time
34	0		0	1	0	9	5	12	0	2	1	4	0	7:00 AM
34	0		0	0	0	7	7	- 8	0	3	4	- 5	0	7:15 AM
79	0		0	1	0	12	22	20	1	0	0	23	0	7:30 AM
99	0		1	0	0	12	29	30	2	6	2	17	0	7:45 AM
75	0		1	0	0	14	15	28	1	2	0	14	0	8:00 AM
68	0		0	1	0	10	17	18	0	5	2	15	0	8:15 AM
36	0		0	0	0	10	13	7	0	2	0	4	0	8:30 AM
54	0		0	1	0	12	16	10	1	3	2	9	0	8:45 AM
321	0		2	2	0	48	83	96	4	13	4	69	0	

Start Date	13-A	pr-05											
Site Code	SR 49 a	t Mark Tw	vain										
	SR 49 n	orthbound	1		Mark Tw	ain eastb	ound		SR 49 s	outhboun	d		
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
7:00 AM	.0	68	4	0	2	0	7	0	1	46	0	0	128
7:15 AM	0	107	5	0	4	0	7	0	4	64	0	.0	191
7:30 AM	0	136	8	0	4	0	19	. 0	4	104	0	0	275
7:45 AM	0	160	9		11	0	33	0	6	110	0	0	329
8:00 AM	0	106	5	0	5	. 0	16	§ (0	7	111	0	0	250
8:15 AM	0	106	2	0		0	6		2	97	0		219
8:30 AM	0	115	- 1	0		0	4	0	41	95		0	223
8:45 AM	0	107	1	0	2	0	9	0	5	98	0	O	222
	0	508	24	0	26	0	74	0	19	422	0	0	1073
Start Date	13-A	spr-05											
Site Code			vain										
Street Nan	SR 49 n	orthbound	1		Mark Tw	ain eastb	ound		SR 49 s	outhboun	d		
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
4:00 PM	. 0	143	3	0	4	0	12	. 0	7	131	0	0	300
4:15 PM	.0	129	4	0	3	0	8	0	7	185	.0	0	336
4:30 PM	.0	109	3	0	5	0	7	0	10	133	. 0	0	267
4:45 PM	0	133		0	7	0	5	0	16	137	0	0	304
5:00 PM	0	155	3	0	6	0	5	0	15	153	0	0	337
5:15 PM	0	143	2 2	0	4 3	0	5 5 3 3	0	8	154	0	0	314
5:30 PM	0	105		0	3	0	3	0	16	153	0	0	282
5:45 PM	0	115	7	0	4	0	11	0	16	169	0	0	322
	0	518	14	0	17	0	22	0	55	629	0	0	1255



Start Date		pr-05	ij.										
Site Code	SR 4 at	Angel Oa	iks										
Street Nan					Angel O	aks north	bound		SR 4 Ea	stbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
7:00 AM	0	32	4	0	5	0	7	0	1	20	0	0	69
7:15 AM	0	27	7	0		0	3	0	6		0	0	86
7:30 AM	0	30	22	0	8	0	4	0	2	57	0	0	123
7:45 AM	0	27	15	0	6	0	13	0			0		129
8:00 AM	0	29	11	0	11	0	5	0	3	40	0	0	99
8:15 AM	.0	28	10	0	6	0	7	0	6	20	.0		77
8:30 AM	.0	27	4	0	10	0	4	0	1	38			84
8:45 AM	0	22	8	0	11	0	5	. 0	3	40	0	0	89
	0	113	55	0	32	0	25	0	16	196	0	0	437
Start Date	13-A	pr-05											
Site Code		Angel Oa	iks										
Street Nan					Angel O	aks north	bound		SR 4 Ea	stbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
4:00 PM	0	39	8	.0	8	0	10	0	7	43	0	0	115
4:15 PM	0	33	11	0	10	0	4	0	10	50	0	0	118
4:30 PM	0	41	10	0	16	0	11	0	11	37	0	0	126
4:45 PM	0	36	10	0	16	0	8	0	7	46	0	0	123
5:00 PM	0	38	16	0	10	0	7	0	8	43	0		122
5:15 PM	0	45	11	0	1	0	6	0	5	28	0		96
5:30 PM	0	30	13	0	12	0	5	0	11	36	0	0	107
5:45 PM	0	31	14	.0	9	. 0	7	0	. 6	37	0		104
	0	148	47	0	52	0	30	0	36	176	0	0	489

Year 2005 Scenarios (scenario listed in upper left corner on calculation sheet output).

	*	(•	1	*-	•	4	Ť	1	-	Į.	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		4		77.0	4	04-011	1100	4	14014	400	4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2	2	96	4	20	0	55	83	8	73	- 12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	2	104	4	22	0	60	90	9	79	2
Pedestrians	1,000	1.71		100.0			4.77	07.5	10.70	2000	0.77	
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)		-44550000			46.88195							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	227	248	80	206	204	105	82			150		
vC1, stage 1 conf vol	2009	257000	50.00		08302355	7.5000	10000			350.0000		
vC2, stage 2 conf vol												
vCu, unblocked vol	227	248	80	206	204	105	82			150		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3,5	4.0	3.3	2.2			2.2		
pO queue free %	99	100	100	86	99	98	100			99		
cM capacity (veh/h)	705	651	980	745	688	950	1516			1431		
Direction, Lane#	EB 1	WB 1	NB.1	SB 1								
Volume Total	12	130	150	90								
Volume Left	8	104	0	9								
Volume Right	2	22	90	2								
cSH	731	770	1516	1431								
Volume to Capacity	0.02	0.17	0.00	0.01								
Queue Length 95th (ft)	1	15	0	0								
Control Delay (s)	10.0	10.6	0.0	0.8								
Lane LOS	В	В		A								
Approach Delay (s)	10.0	10.6	0.0	0.8								
Approach LOS	В	В	100-000									
Intersection Summary			2.000									
Average Delay			4.1									
Intersection Capacity U	tilizati	on	26.0%	i	CU Lev	el of Se	rvice		A			



21: SR 4 & Angel Oa	- 33 S. J. J. P. J.	511-		11010100		100-		
	-	*	*	20 July 1	*	~		
Movement	EBT	EBR	WBL	WET	NBL	NBR		
Lane Configurations	*	T.	7	+	7	100		
Sign Control	Free			Free	Stop			
Grade	0%			0%	0%			
Volume (veh/h)	219	36	47	148	30	62		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	238	39	51	161	33	67		
Pedestrians								
_ane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type					None			
Median storage veh)								
Upstream signal (ft)								
X, platoon unblocked								
C, conflicting volume			277		501	238		
vC1, stage 1 conf vol			1002.11					
vC2, stage 2 confivol								
vCu, unblocked vol			277		501	238		
C, single (s)			4.1		6.4	6.2		
tC, 2 stage (s)			030181		100.00.00			
tF (s)			2.2		3.5	3.3		
pO queue free %			96		94	92		
oM capacity (veh/h)			1286		509	801		
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2		
Volume Total	238	39	51	161	33	67		
Volume Left	0	ō	51	0	33	0		
Volume Right	0	39	0	0	0	67		
SH	1700	1700	1286	1700	509	801		
Volume to Capacity	0.14	0.02	0.04	0.09	0.06	0.08		
Queue Length 95th (ft)	OL OF THE PARTY OF	0	3	0	5	7		
Control Delay (s)	0.0	0.0	7.9	0.0	12.6	9.9		
Lane LOS	-5350	11919	Α	500	В	Α		
Approach Delay (s)	0.0		1.9		10.8			
Approach LOS	68381		3100		В			
ntersection Summary								
Average Delay			2.5					
Intersection Capacity U	1010-11	0.044	28.2%	43	CH L	el of Service	. A	



12: SR 4 & SR 49								0.35040341761426
	-	*	4	*	*	4		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	ħ	1	7	+	+	T.		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util, Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.85	1.00	1.00	1.00	0.85		
FIt Protected	0.95	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583		
FIt Permitted	0.95	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583		
Volume (vph)	68	215	92	429	550	78		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	74	234	100	466	598	85		
RTOR Reduction (vph)	70.000	195	0	0	0	41		
Lane Group Flow (vph)	W2012V1	39	100	466	598	44		
Turn Type		Prot	Prot	100		Perm		
Protected Phases	4	4	5	2	6	Indentity.		
Permitted Phases	200	046	_	~	177	6		
Actuated Green, G (s)	7.9	7.9	3.3	31.7	24.4	24.4		
Effective Green, g (s)	7.9	7.9	3.3	31.7	24.4	24.4		
Actuated g/C Ratio	0.17	0.17	0.07	0.67	0.51	0.51		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	294	263	123	1241	955	811		
v/s Ratio Prot	80.04	0.02	c0.06	0.25	00.32	9317.		
v/s Ratio Perm	00.04	0.02	.00,00	10020	00,02	0.03		
w/c Ratio	0.25	0.15	0.81	0:38	0.63	0.05		
Uniform Delay, d1	17.3	17.0	21.8	3.5	8.3	5.8		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.5	0.3	32.1	0.2	1.3	0.0		
Delay (s)	17.7	17.2	53.9	3.7	9.6	5.8		
Level of Service	В	В	D.	A	A	A		
Approach Delay (s)	17.4		-	12.6	9.1	2000		
Approach LOS	В			В	Α			
Intersection Summary	26150			.5411	7900			
HCM Average Control	Delav		12.0	ì	ICM Le	vel of Service	В	
HCM Volume to Capac	Control of the Control	0.0	0.56	-	destination of			
Actuated Cycle Length	00.000		47.6	3	Sum of	lost time (s)	12.0	
Intersection Capacity U		on.	48.9%			el of Service	A	
Analysis Period (min)	- Crambell		15				***	
c Critical Lane Group	10		Links					



	(1)					- 55		920		939	33	33
	•	-	+	1	-	•	1	Ť	1	>	**	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		4	(1300)	7	1	The state of the s	7	1>	112.000.00	7		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util, Factor		1,00		1.00	1.00		1,00	1.00		1,00	1.00	1,00
Fit		0.97		1.00	0.86		1.00	0.99		1.00	1.00	0.85
FIt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1,00
Satd, Flow (prot)		1782		1770	1605		1770	1849		1770	1863	1583
FIt Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1,00
Satd, Flow (perm)		1782		1770	1605		1770	1849		1770	1863	1583
Volume (vph)	5	10	5	50	10	120	- 5	380	20	240	525	- 5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	11	5	54	11	130	- 5	413	22	261	571	
RTOR Reduction (vph)	0	- 5	0	0	117	0	0	2	0	0	0	. 2
Lane Group Flow (vph)	0	16	0	54	24	. 0	- 5	433	0	261	571	- 3
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	- 4		8	8		- 5	2		1	6	
Permitted Phases	10,50				-		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-				6
Actuated Green, G (s)		1.2		6.1	6.1		0.6	25.0		12.2	36.6	36.6
Effective Green, g (s)		1.2		6.1	8.1		0.6	25.0		12.2	36.6	36.6
Actuated g/C Ratio		0.02		0.10	0.10		0.01	0.41		0.20	0.60	0.60
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		35		178	162		18	764		357	1127	958
w/s Ratio Prot		∞0.01		c0.03	0.02		0.00	The second second second		60.15	0.31	56043
v/s Ratio Perm												0.00
w/c Ratio		0.46		0.30	0.15		0.28	0.57		0.73	0.51	0.00
Uniform Delay, d1		29.3		25.2	24.8		29.7	13.6		22.6	6.8	4.7
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		9.3		1.0	0.4		8.3	1.0		7.5	0.4	0.0
Delay (s)		38.6		26.2	25.3		38.0	14.6		30.1	7.2	4.7
Level of Service		D		C	С		D	В		C	Α	A
Approach Delay (s)		38.6		345	25.5		4800	14.8			14.3	100
Approach LOS		D			C			В			В	
Intersection Summary		4,000										
HCM Average Control I	elay		16.3	F	CM Le	vel of S	Service		B			
HCM Volume to Capac	ity rati	0	0.57				NO CONTRACTOR					
Actuated Cycle Length	200		60.5	9	um of	lost tim	e (s)		16.0			
Intersection Capacity U	tilizati	on	53.3%	- 0	CU Lev	el of Se	envice		A			
Analysis Period (min)			15									



	*	>	4	1	į.	1	
FW10022204	ren.	555	A PA	- 52	- 31	200	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	Y		- 7	- T	- 19		
Sign Control	Stop			Free	Free		
Grade	0%	7272	12.2	0%	0%	22	
Volume (veh/h)	22	17	14	518	629	65	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	24	18	15	563	684	60	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
A CONTROL OF THE PARTY.	None:						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked	ra de estera						
vC, conflicting volume	1307	714	743				
vC1, stage 1 confivol							
vC2, stage 2 confivol							
vCu, unblocked vol	1307	714	743				
tC, single (s)	6.4	6.2	4.1				
tC, 2 stage (s)							
tF(s)	3.5	3.3	2.2				
pO queue free %	86	96	98				
oM capacity (veh/h)	173	432	864				
Direction, Lane#	EB 1	NB 1	NB 2	88.1			
Volume Total	42	15	563	743			
Volume Left	24	15	0	0			
Volume Right	18	0	0	60			
cSH	234	864	1700	1700			
Volume to Capacity	0.18	0.02	0.33	0.44			
Queue Length 95th (ff)	OLD STREET, ST	1	0	0			
Control Delay (s)	23.7	9.2	0.0	0.0			
Lane LOS	C	A	7/15	5.00			
Approach Delay (s)	23.7	0.2		0.0			
Approach LOS	C	CONTRACTOR OF		5.77			
Intersection Summary							
Average Delay			0.8				
Intersection Capacity U	tilizati	00	46.4%	- 1	CHILIPAN	el of Service	A



28: Stockton Rd & A			-		631	0.20	- 55	0.40	59	Ya	5%	272
	•		•	1	•	•	1	1	1	1	ŧ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		4			4			4			4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2	2	48	4	20	0	32	51	8	48	- 3
Peak Hour Factor	0.92	0.92	0,92	0.92	0.92	0.92	0.92	0,92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	2	52	4	22	0	35	55	9	52	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	157	161	53	136	134	62	54			90		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	157	161	53	136	134	62	54			90		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
pO queue free %	99	100	100	94	99	98	100			99		
cM capacity (veh/h)	785	727	1014	827	752	1002	1551			1505		
Direction, Lane#	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	78	90	63								
Volume Left	8	52	0	9								
Volume Right	2	22	55	2								
cSH	806	864	1551	1505								
Volume to Capacity	0.01	0.09	0.00	0.01								
Queue Length 95th (ft)	9	7	0	0								
Control Delay (s)	9.5	9.6	0.0	1.1								
Lane LOS	A	A		Α								
Approach Delay (s)	9.5	9.6	0.0	1.1								
Approach LOS	A	Α										
Intersection Summary												
Average Delay	200000		3.8	ш	oncos	of the state of	115		411			
Intersection Capacity U	tilizati	on	21.0%	1	CU Lev	el of Se	rvice		A			
Analysis Period (min)			15									



scenario 1 (access A) 21: SR 4 & Angel Oaks Dr

	-	*	1	•	4	*		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	+	1	Pi	4	7	7		
Sign Control	Free		•	Free	Stop	-		
Grade	0%			0%	0%			
Volume (veh/h)	219	36	22	148	30	39		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	238	39	24	161	33	42		
Pedestrians		1000	5917	-115-10	6187			
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type					None			
Median storage veh)					- Million			
Upstream signal (ft)								
pX, platoon unblocked								
vC, conflicting volume			277		447	238		
vC1, stage 1 conf vol						Filter		
vC2, stage 2 conf vol								
vCu, unblocked vol			277		447	238		
tC, single (s)			4.1		6.4	6.2		
tC, 2 stage (s)								
tF (s)			2.2		3.5	3.3		
pO queue free %			98		94	95		
cM capacity (veh/h)			1286		559	801		
Direction, Lane#	EB 1	EB 2	WB 1	WB2	NB 1	NB 2		
Volume Total	238	39	24	161	33	42		
Volume Left	0	0	24	0	33	0		
Volume Right	0	39	0	0	0	42		
cSH	1700	1700	1286	1700	559	801		
Volume to Capacity	0.14	0.02	0.02	0.09	0.08	0.05		
Queue Length 95th (ft)	0	0	1	0	5	4		
Control Delay (s)	0.0	0.0	7.9	0.0	11.8	9.7		
Lane LOS			Α		B	А		
Approach Delay (s)	0.0		1.0		10.7			
Approach LOS					В			
Intersection Summary								
Average Delay			1.8					
Intersection Capacity U	tilizati	on s	28.2%	13	CU Lev	el of Service	A	
Analysis Period (min)			15					

12: SR 4 & SR 49	210			100				8/10/200
	٠	•	4	t	1	~		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	7	1	1					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util, Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.85	1.00	1.00	1.00	0.85		
FIt Protected	0.95	1.00	0.95	1.00	1.00	1.00		
Satd, Flow (prot)	1770	1583	1770	1863	1863	1583		
FIt Permitted	0.95	1.00	0.95	1.00	1.00	1.00		
Satd, Flow (perm)	1770	1583	1770	1863	1863	1583		
Volume (vph)	68	192	67	429	550	78		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	74	209	73	466	598	85		
RTOR Reduction (vph)	A1, 0,4	176	Ö	0	0	40		
Lane Group Flow (vph)		33	73	466	598	45		
Turn Type	11.00	Prot	Prot	100		Perm		
Protected Phases	4	4	5	2	6	MASSINIA		
Permitted Phases	12750	775				6		
Actuated Green, G (s)	7.8	7.8	3.4	33.1	25.7	25.7		
Effective Green, g (s)	7.8	7.8	3.4	33.1	25.7	25.7		
Actuated g/C Ratio	0.16	0.16	0.07	0.68	0.53	0.53		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		
	282	253	123	1261	979	832		
Lane Grp Cap (vph) w/s Ratio Prot	00.04	0.02	60.04	0.25	d0.32	032		
ws Natio Piot ws Ratio Perm	00.04	0.02	00.04	0.20	00.52	0.03		
ws Ratio	0.26	0.13	0.59	0.37	0.61	0.05		
		277,127,775	22.1	3.4	8.1	5.7		
Uniform Delay, d1	18.0	17.6	1.00	1.00	1.00	1.00		
Progression Factor	0.5	0.2	7.5	0.2	1.1	0.0		
Incremental Delay, d2	The second second second second		The second second second					
Delay (s)	18.5	17.9 B	29.6 C	3.6 A	9.2 A	5.7 A		
Level of Service	40 O	В	U		8.8	/80		
Approach Delay (s) Approach LOS	18.0 B			7.1 A				
				7	350	9		
Intersection Summary								
HCM Average Control I	Delay		9.9	1	ICM Le	vel of Service	A	
HCM Volume to Capac	ity rati	0	0.54		AND THE PARTY OF T			
Actuated Cycle Length	(s)		48.9	9	Sum of	lost time (s)	12.0	
Intersection Capacity U	Itilizati	on	47.5%	i	CU Lev	el of Service	A	
Analysis Period (min)			15					
 Critical Lane Group 	00							

Lane Configurations Ideal Flow (vphpl) Total Lost time (s) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Volume (vph)	5 0.92	EBT 4900 4.0 1.00 0.97 0.99 1782 0.99 1782	EBR 1900	1900 4.0 1.00 0.95 1770	WBT 1900 4.0 1.00 0.86 1.00	WBR 1900	NBL 1900 4.0 1.00	NBT 1900 4.0 1.00	NBR 1900	SBL 1900 4.0 1.00	\$BT 1900 4.0 1.00	1900 4.0
Lane Configurations Ideal Flow (vphpl) Total Lost time (s) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Volume (vph)	1900 5 0.92	4900 4.0 1.00 0.97 0.99 1782 0.99 1782		1900 4.0 1.00 1.00 0.95 1770	1900 4.0 1.00 0.86	30.40	1900 4.0 1.00	1900 4.0		ሻ 1900 4.0	1900 4.0	1900 4.0
Ideal Flow (vphpl) Total Lost time (s) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Volume (vph)	5 0.92	1900 4.0 1.00 0.97 0.99 1782 0.99 1782	1900	1900 4.0 1.00 1.00 0.95 1770	1900 4.0 1.00 0.86	1900	1900 4.0 1.00	1900 4.0	1900	1900 4.0	1900 4.0	1900 4.0
Total Lost time (s) Lane Util. Factor Frt Flt Protected Satd, Flow (prot) Flt Permitted Satd, Flow (perm) Volume (vph)	5 0.92	4.0 1.00 0.97 0.99 1782 0.99 1782	1900	4.0 1.00 1.00 0.95 1770	4.0 1.00 0.86	1900	4.0 1.00	4.0	1900	4.0	4.0	4.0
Lane Util. Factor Frt Flt Protected Satd, Flow (prot) Flt Permitted Satd, Flow (perm) Volume (vph)	5 0.92	1.00 0.97 0.99 1782 0.99 1782		1.00 1.00 0.95 1770	1.00 0.86		1.00	-		00.527	0.000	-
Frt Fit Protected Satd, Flow (prot) Fit Permitted Satd, Flow (perm) Volume (vph)	5 0.92	0.97 0.99 1782 0.99 1782		1.00 0.95 1770	0.86		Contract of	1.00		1.00	34-1613	
Fit Protected Satd, Flow (prot) Fit Permitted Satd, Flow (perm) Volume (vph)	5 0.92	0.99 1782 0.99 1782		0.95 1770				A		500.00	7-10-10-10-10-10-10-10-10-10-10-10-10-10-	1.00
Satd, Flow (prot) Flt Permitted Satd, Flow (perm) Volume (vph)	5 0.92	1782 0.99 1782		1770	1,00		1.00	0.99		1.00	1.00	0.86
Flt Permitted Satd. Flow (perm) Volume (vph)	5 0.92	0.99 1782		-	10 mm (10 mm)		0.95	1.00		0.95	1.00	1.00
Satd, Flow (perm) Volume (vph)	5 0.92	1782			1605		1770	1845		1770	1863	1583
Volume (vph)	5 0.92			0.95	1,00		0.95	1.00		0.95	1.00	1.00
the property of the second sec	0.92	4.0		1770	1605		1770	1845		1770	1863	1583
Peak-hour factor PHF	probable of Comme	A bring Lat Smooth P	- 5	50	10	120	5	307	20	240	470	t
		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	11	- 5	54	11	130	5	334	22	261	511	ŧ
RTOR Reduction (vph)	0	- 5	0	0	116	0	0	2	0	0	0	2
Lane Group Flow (vph)	. 0	16	- 0	54	25	0	5	354	0	261	511	
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		- 5	2		1	6	
Permitted Phases												ŧ
Actuated Green, G (s)		1.1		6.1	6.1		0.6	21.9		12.3	33,6	33,6
Effective Green, g (s)		1.1		6.1	6.1		0.6	21.9		12.3	33.6	33.6
Actuated g/C Ratio		0.02		0.11	0.11		0.01	0.38		0.21	0.59	0.59
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		34		188	174		19	704		379	1091	927
w/s Ratio Prot	1	0.01		60.03	0.02		0.00	0.19		c0.15	c0.27	
v/s Ratio Perm		100			2000		1000	7.00		10000	S 45 to	0.00
v/c Ratio		0.47		0.29	0.15		0.26	0.50		0.69	0.47	0.00
Uniform Delay, d1		27.9		23.6	23.3		28.2	13.6		20.8	6.8	4.9
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		10.0		0.8	0.4		7.3	0.6		5.1	0.3	0.0
Delay (s)		37.9		24.5	23.7		35.5	14.1		25.9	7.1	4.9
Level of Service		D		C	- c		D	В		C	A	1
Approach Delay (s)		37.9		-	23.9		1,440	14.4			13.4	
Approach LOS		D			C			В			В	
Intersection Summary					AND DESCRIPTION OF				211			
HCM Average Control D	elav		15.6	1	ICM Le	vel of S	ervice		В			
HCM Volume to Capacit	Control of the Control of the Control	N.	0.49	17.00								
Actuated Cycle Length (ALCOHOLD STREET	4.	57.4	9	um of	ost tim	e (s)		12.0			
Intersection Capacity Uti		n 7	49.4%		CU Lev	and principle services on	1000		A			
Analysis Period (min)	1-11-	0.0	15	111		11500	10000		-32			



	*	•	4	O.	1	4	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	N.		7	+	15		
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	32	27	19	518	629	75	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	35	29	21	563	684	82	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume		724	765				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1329	724	765				
tC, single (s)	6.4	6.2	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
pO queue free %	79	93	98				
cM capacity (veh/h)	167	425	848				
Direction, Lane#	EB 1	NB 1	NB 2	SB 1			
Volume Total	64	21	563	765			
Volume Left	35	21	0	0			
Volume Right	29	0	0	82			
cSH	231	848	1700	1700			
Volume to Capacity	0.28	0.02	0.33	0.45			
Queue Length 95th (ft)	27	-2	0	0			
Control Delay (s)	26.5	9.4	0.0	0.0			
Lane LOS	D	A					
Approach Delay (s)	26.5	0.3		0.0			
Approach LOS	D						
Intersection Summary							
Average Delay	zassay so		1.3		oness	atte sesses ate	ett-
Intersection Capacity U	tilizati	on	47.7%	10	CU Lev	el of Service	A
Analysis Period (min)			15				



	*	-	*	1	•	•	4	1	1		1	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		4			4	or to have		4	110000		4:	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2	2	48	4	20	0	32	51	8	48	- 2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	- 8	2	2	52	4	22	0	35	55	9	52	- 3
Pedestrians								100000	5750	5007		
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	157	161	53	136	134	62	54			90		
vC1, stage 1 confivol			10/10/201	68100								
vC2, stage 2 conf vol												
vCu, unblocked vol	157	161	53	136	134	62	54			90		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)			100-000	00,1000								
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
pO queue free %	99	100	100	94	99	98	100			99		
cM capacity (veh/h)	785	727	1014	827	752	1002	1551			1505		
Direction, Lane#	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	78	90	63								
Volume Left	8	52	0	9								
Volume Right	2	22	55	. 2								
cSH	806	864	1551	1505								
Volume to Capacity	0.01	0.09	0.00	0.01								
Queue Length 95th (ft)	1	7	0	0								
Control Delay (s)	9.5	9.6	0.0	1.1								
Lane LOS	A	A		A								
Approach Delay (s)	9.5	9.6	0.0	1.1								
Approach LOS	Α	A										
Intersection Summary												
Average Delay			3.8									
Intersection Capacity U	tili- ati	00	21.0%	1	CU Lev	at of Ca	ndon		A			



scenario 2 (access B) 21: SR 4 & Angel Oaks Dr

6/10/2005

	-	~	1	*	4	1		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations		7	7	+	ħ	7		
Sign Control	Free			Free	Stop			
Grade	0%			0%	0%			
Volume (veh/h)	219	36	22	148	30	39		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	238	39	24	161	33	42		
Pedestrians	2000					THE SE		
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type					None			
Median storage veh)								
Upstream signal (ft)								
pX, platoon unblocked								
vC, conflicting volume			277		447	238		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol			277		447	238		
tC, single (s)			4.1		8.4	6.2		
tC, 2 stage (s)								
tF (s)			2.2		3.5	3.3		
pO queue free %			98		94	95		
oM capacity (veh/h)			1286		559	801		
Direction, Lane#	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2		
Volume Total	238	39	24	161	33	42		
Volume Left	0	0	24	0	33	0		
Volume Right	0	39	0	0	. 0	42		
cSH	1700	1700	1286	1700	559	801		
Volume to Capacity	0.14	0.02	0.02	0.09	0.06	0.05		
Queue Length 95th (ft)	0	0	1	0	5	4		
Control Delay (s)	0.0	0.0	7.9	0.0	11.8	9.7		
Lane LOS			A		В	A		
Approach Delay (s)	0.0		1.0		10.7			
Approach LOS					В			
Intersection Summary								
Average Delay			1,8					
Intersection Capacity U	tilizati	on	28.2%	1	CU Lev	el of Service	A	
Analysis Period (min)			15					



12: SR 4 & SR 49								
	*	*	4	Ť	↓	~		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	ħ	7	7	+		1		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util, Factor	1:00	1.00	1.00	1.00	1.00	1:00		
Frt	1.00	0.85	1.00	1.00	1.00	0.85		
Fit Protected	0.95	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583		
FIt Permitted	0.95	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583		
Volume (vph)	68	192	67	429	550	78		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	74	209	73	466	598	85		
RTOR Reduction (vph)		176	ő	0	0	40		
Lane Group Flow (vph)		33	73	466	598	45		
Turn Type		Prot	Prot			Perm		
Protected Phases	4	4	5	2	6	rseini		
Permitted Phases			- 0.		.0.	6		
Actuated Green, G (s)	7.8	7.8	3.4	33.1	25.7	25.7		
Effective Green, g (s)	7.8	7.8	3.4	33.1	25.7	25.7		
Actuated g/C Ratio	0.16	0.16	0.07	0.68	0.53	0.53		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	282	253	123	1261	979	832		
v/s Ratio Prot	60.04	0.02	60.04	0.25	60.32	032		
ws natio Flot w/s Ratio Perm	00.04	0.02	00,04	0,20	00.52	0.03		
ws Natio	0.00	0.13	0.50	0.37	0.61	0.05		
CONTRACTOR OF THE CONTRACTOR O	18.0		0,59 22.1		8.1	5.7		
Uniform Delay, d1	1.00	17.6	1.00	1.00	THE RESERVE OF THE PARTY OF THE	1.00		
Progression Factor	0.5	1.00		-	1.00	0.0		
Incremental Delay, d2	18.5	17.9	7.5 29.6	0.2 3.6	9.2	5.7		
Delay (s) Level of Service	10,0 B	17.8 B	29.0 C	3.0 A	9.2 A	A.		
IS A STATE OF THE PARTY OF THE	18.0		U		8.8	(A)		
Approach Delay (s) Approach LOS	18,0 B			7.1 A	0,0 A			
Intersection Summary	558			71.0	(2)(2)	>		
	N. J		8.6		ICAL I			
HCM Average Control	STATE OF TAXABLE PARTY.	20	9.9	,	1CM Le	vel of Service	A	
HCM Volume to Capac		0	0,54	3	š		40.0	
Actuated Cycle Length		and the last	48.9		Personal Control of Control of Control	lost time (s)	12.0	
Intersection Capacity U	itinzati	on	47.5%	1	CU Lev	el of Service	А	
Analysis Period (min)			15					



	*	360	100				4	•			1	1
Waterna Store of the	18	FIRSTA.	(W/)			12.000		1700000	20	56	500	9.7
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	0.52.530	4	ne suscess	ħ	1,	VARIABLE 10	7	1	necessor.		+	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util, Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97		1.00	0.86		1.00	0.99		1.00	1.00	0.85
FIt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1,00
Satd. Flow (prot)		1782		1770	1605		1770	1845		1770	1863	1583
FIt Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1,00
Satd. Flow (perm)	- 10	1782		1770	1605	1000	1770	1845	75.00	1770	1863	1583
Volume (vph)	5	10	5	50	10	120	5	307	20	240	470	5
All and the second of the seco	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	- 5	11	- 5	54	11	130	5	334	22	261	511	- 5
RTOR Reduction (vph)	0	5	0	0	116	0	0	2	0	0	0	- 2
Lane Group Flow (yph)		16	- 0	54	25	0	5	354	0	261	511	3
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	- 4	- 4		8	- 8		5	2		- 1	6	
Permitted Phases					2000		- 12000	- Maria 1		0.00000		6
Actuated Green, G (s)		1.1		6.1	6.1		0.6	21.9		12.3	33.6	33.6
Effective Green, g (s)		1.1		6.1	6.1		0.6	21.9		12.3	33.6	33.6
Actuated g/C Ratio		0.02		0.11	0.11		0.01	0.38		0.21	0.59	0,59
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		34		188	171		19	704		379	1091	927
v/s Ratio Prot		c0.01		60.03	0.02		0.00	0.19		c0.15	o0.27	
ws Ratio Perm												0.00
w/c Ratio		0.47		0.29	0.15		0.26	0.50		0.69	0.47	0.00
Uniform Delay, d1		27.9		23.6	23.3		28.2	13.6		20.8	8.8	4.9
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		10.0		0.8	0.4		7.3	0.6		5.1	0.3	0.0
Delay (s)		37.9		24.5	23.7		35.5	14.1		25.9	7.1	4.9
Level of Service		D		C	C		D	В		C	A	A
Approach Delay (s)		37.9			23.9			14.4			13.4	
Approach LOS		D			C			В			В	
Intersection Summary												
HCM Average Control D			15.6	19	ICM Le	vel of S	ervice		В			
HCM Volume to Capac		0	0.49									
Actuated Cycle Length	(\$)		57.4	28	um of	lost tim	e (s)		12.0			
Intersection Capacity U	tilizati	on	49.4%	- 0	CU Lev	el of Se	rvice		A			
Analysis Period (min)			15									



	*	~	4	1	Ţ	4		
Name and American	es.	ESS.	A COLUMN	-		00000000000000000000000000000000000000		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	Y		7	_ +	1			
Sign Control	Stop			Free	Free			
Grade	0%	44	244	0%	0%	448		
Volume (veh/h)	50	44	29	518	629	113		
Peak Hour Factor	0.92	0.92	0.92	0.92	The second second	0.92		
Hourly flow rate (vph)	54	48	32	563	684	123		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)	A Contract							
Median type	None							
Median storage veh)								
Upstream signal (ff)								
pX, platoon unblocked			007					
vC, conflicting volume	1371	745	807					
vC1, stage 1 conf vol								
vC2, stage 2 conf vol	19.00000	7.45						
vCu, unblocked vol	1371	745	807					
tC, single (s)	6.4	6.2	4.1					
tC, 2 stage (s)		72.2	- 2.2					
tF (s)	3,5	3.3	2.2					
pO queue free %	65	88	96					
oM capacity (veh/h)	155	414	818					
Direction, Lane#	EB 1	NB 1	NB 2	SB 1				
Volume Total	102	32	563	807				
Volume Left	54	32	0	0				
Volume Right	48	0	0	123				
cSH	219	818	1700	1700				
Volume to Capacity	0.47	0.04	0.33	0.47				
Queue Length 95th (ft)	57	3	0	0				
Control Delay (s)	35.0	9.6	0.0	0.0				
Lane LOS	E	Α		100-000				
Approach Delay (s)	35.0	0.5		0.0				
Approach LOS	E			100-000				
Intersection Summary								
Average Delay			2.6					
Intersection Capacity U	tilizati	on	52.1%	B	CU Lev	el of Service	A	



	*	-	`	*	10 1	*	4	1	-	4	Į.	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		4			4			4			4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2	2	72	4	20	0	44	67	8	61	- 2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	2	78	4	22	0	48	73	9	66	2
Pedestrians		120	-	Mine	07		140		Mine		1500	
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)		Material			- Million							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	193	205	67	172	170	84	68			121		
vC1, stage 1 conf vol				4410	nr-c-					GOV.		
vC2, stage 2 conf vol												
vCu, unblocked vol	193	205	67	172	170	84	68			121		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
pO queue free %	99	100	100	90	99	98	100			99		
cM capacity (veh/h)	743	687	996	784	719	975	1533			1467		
Direction, Lane#	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	104	121	77								
Volume Left	8	78	0	9								
Volume Right	2	22	73	. 2								
cSH	767	814	1533	1467								
Volume to Capacity	0.02	0.13	0.00	0.01								
Queue Length 95th (ft)	1	11	0	0								
Control Delay (s)	9.8	10.1	0.0	0.9								
Lane LOS	A	В		A								
Approach Delay (s)	9.8	10.1	0.0	0.9								
Approach LOS	A	В										
Intersection Summary												
Average Delay			3.9									
Intersection Capacity U	tilizati	on S	23.5%	54	CU Lev	el of Se	rvice		A			
Analysis Period (min)			15									



scenario 3 access C 21: SR 4 & Angel Oaks Dr

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	-	*	1	•	4	*		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	4	f	ħ		- 1	1		
Sign Control	Free	-	-	Free	Stop	44.44		
Grade	0%			0%	0%			
Volume (veh/h)	219	36	47	148	30	62		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	238	39	51	161	33	67		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type					None			
Median storage veh)								
Upstream signal (ft)								
pX, platoon unblocked								
vC, conflicting volume			277		501	238		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol			277		501	238		
tC, single (s)			4.1		6.4	6.2		
tC, 2 stage (s)								
tF (s)			2.2		3.5	3.3		
pO queue free %			96		94	92		
cM capacity (veh/h)			1286		509	801		
Direction, Lane#	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2		
Volume Total	238	39	51	161	33	87		
Volume Left	0	0	51	0	33	o,		
Volume Right	0	39	ő	0	0	67		
cSH	1700	1700	1286	1700	509	801		
Volume to Capacity	0.14	0.02	0.04	0.09	0.06	0.08		
Queue Length 95th (ft		0.02	3	0.00	5	7		
Control Delay (s)	0.0	0.0	7.9	0.0	12.6	9.9		
Lane LOS	0.0	0.0	A.	0.0	12.0 B	Α.		
Approach Delay (s)	0.0		1.9		10.8	-2X		
Approach LOS	949		S149		В			
Intersection Summary					41666			
Average Delay			2.5	-	NI MINISTER	tto ones —	Mr.	
Intersection Capacity L	Itilizati	on:	28.2%	1	CU Lev	el of Service	A A	
Analysis Period (min)	The street of th		15					



		02703	5020		100			
	•		•	1	1	*		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	7	1	7	+	*	T.		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.85	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583		
FIt Permitted	0.95	1,00	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583		
Volume (vph)	68	204	80	429	550	78		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	74	222	87	466	598	85		
RTOR Reduction (vph)	20.00	185	0	0	0	41		
Lane Group Flow (vph)		37	87	466	598	44		
Turn Type	10000	Prot	Prot			Perm		
Protected Phases	4	4	5	2	6	ANGRAM		
Permitted Phases	2000	12,770		-		6		
Actuated Green, G (s)	7.9	7.9	3.3	32.1	24.8	24.8		
Effective Green, g (s)	7.9	7.9	3.3	32.1	24.8	24.8		
Actuated g/C Ratio	0.16	0.16	0.07	0.67	0.52	0.52		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	291	261	122	1246	963	818		
v/s Ratio Prot	c0.04	0.02	c0.05	0.25	o0.32	010		
v/s Ratio Perm	00.04	0.02	00.00	0.25	00,02	0.03		
w/c Ratio	0.25	0.14	0.71	0.37	0.62	0.05		
Uniform Delay, d1	17.5	17.1	21.9	3.5	8.3	5.8		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
And the latter than the property of the party of the part	0.5	0.2	17.8	0.2	1.3	0.0		
Incremental Delay, d2	17.9	17.4	39.7	3.7	9.5	5.8		
Delay (s) Level of Service	17.8 B	17.4 B	39./ D	. A	a.s A	A		
Charles and the Charles of the Charl	17.5		- 0	9.4	9.0			
Approach Delay (s) Approach LOS	17.5 B			9. 9	8.0 A			
	1670			88	300			
Intersection Summary	6/20/2		303072	- 2	10000	1	· 22	
HCM Average Control			10.8	ŀ	IUM Le	vel of Service	В	
HCM Volume to Capac		00	0.55			V-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	15.574	
Actuated Cycle Length	0.000		48.0		SAN THE RESIDENCE OF THE PARTY	lost time (s)	12.0	
Intersection Capacity U	Itilizati	on	48.2%	- 1	CU Lev	el of Service	Α	
Analysis Period (min)	80		15					

	*	3623823		-	-	4	•	4	*	1	1	1
-154 (F)	TEGS		100	na Albar	#1303350	73536600		eres di	A STATE	006	100	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		4		7	1			1		ħ	- +	ľ
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util, Factor		1.00		1.00	1.00		1.00	1,00		1.00	1.00	1.00
Frt		0.97		1.00	0.86		1.00	0.99		1.00	1.00	0.85
FIt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1782		1770	1605		1770	1847		1770	1863	1583
FIt Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1782		1770	1605		1770	1847		1770	1863	1583
Volume (vph)	5	10	5	50	10	120	5	344	20	240	498	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	- 5	11	- 5	54	11	130	5	374	22	261	541	- 5
RTOR Reduction (vph)	0	5	0	0	116	0	0	2	0	0	0	2
Lane Group Flow (vph)	0	16	0	54	25	0	5	394	0	261	541	S
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		4	6	
Permitted Phases	10	4		- 67			19	- 5		- '		6
Actuated Green, G (s)		1.2		8.1	6.1		0.6	23.0		12.3	34.7	34.7
Effective Green, g (s)		1.2		6.1	6.1		0.6	23.0		12.3	34.7	34.7
Actuated g/C Ratio		0.02		0.10	0.10		0.01	0.39		0.21	0.59	0.59
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		36		184	167		18	725		372	1103	937
v/s Ratio Prot		60.01		60.03	0.02		0.00	0.21		c0.15	œ.29	901
v/s Ratio Perm		.0.01		33,00	0.02		0.00	0.21			w.ze	0.00
w/c Ratio		0.45		0.29	0.15		0.28	0.54		0.70	0.49	0.00
Uniform Delay, d1		28.4		24.3	23.9		28.8	13.7		21.4	6.9	4.9
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		8.6		0.9	0.4		8.3	0.8		5.9	0.3	0.0
Delay (s)		37.0		25.2	24.3		37.0	14.6		27.3	7.2	4.9
Level of Service		D D		20.2 C	24.5 C		D D	B		27.5		7.0 A
Approach Delay (s)		37.0			24.5		U.	14.9			13.7	
Approach LOS		D			24.5 C			В			В.	
Intersection Summary		14.7										
HCM Average Control [alay.		15.9	1	CM La	vel of S	andra		В			- 1
HCM Volume to Capao	Company of the Control of the Contro		0.50		OW LE	ver or c	SIMOS					
Actuated Cycle Length	The second of		58.6		um of	lost tim	a (e)		12.0			
Intersection Capacity U		00	51.4%		Market State (State State)	el of Se	Contract Con		A.			
Analysis Period (min)	unzau	011	15	- 1	CO LEV	er 01 08	10104		- 0			
c Critical Lane Group	00		્યુછ									



	*	~	4	*		1		
March 1995	Sey.	200	:::40		-	W217		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	Y		7		1			
Sign Control	Stop			Free	Free			
Grade	0%	Same	50490	0%	0%			
Volume (veh/h)	22	17	14	528	649	55		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92			
Hourly flow rate (vph)	24	18	15	574	705	60		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type	None							
Median storage veh)								
Upstream signal (ft)								
pX, platoon unblocked								
vC, conflicting volume	1340	735	765					
vC1, stage 1 confivol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1340	735	765					
tC, single (s)	6.4	6.2	4.1					
tC, 2 stage (s)			0.0110					
tF (s)	3.5	3.3	2.2					
pO queue free %	86	96	98					
cM capacity (veh/h)	165	419	848					
Direction, Lane#	EB 1	NB 1	NB 2	SB 1				
Volume Total	42	15	574	765				
Volume Left	24	15	0	0				
Volume Right	18	0	Ö	60				
cSH	225	848	1700	1700				
Volume to Capacity	0.19	0.02	0.34	0.45				
Queue Length 95th (ft)	MACHINE IN	1	0	0				
Control Delay (s)	24.7	9.3	0.0	0.0				
Lane LOS	C	A	100-50	-555				
Approach Delay (s)	24.7	0.2		0.0				
Approach LOS	C	110000		-555				
Intersection Summary								
Average Delay			0.9					
Intersection Capacity U	Hilizati	on.	47.5%	ř	CHLEN	el of Service	A	



					982 131	10.40						11.3
	~		*	1	-	200		1	-	*		*
Movement	EBL	EBT	EBR	WEL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBI
Lane Configurations		4			4			4			4	10.1111
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2	2	48	4	20	0	32	51	8	48	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93
Hourly flow rate (vph)	8	2	2	52	4	22	0	35	55	9	52	
Pedestrians				34410							10000	
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)		150,000			COLUMN TO							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	157	161	53	136	134	62	54			90		
vC1, stage 1 conf vol	12.		7.7	100	1,000	7.7						
vC2, stage 2 conf vol												
vCu, unblocked vol	157	161	53	136	134	62	54			90		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)		9,9	8.5	5.65	9,9	17.77	75.1			100		
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
pO queue free %	99	100	100	94	99	98	100			99		
oM capacity (veh/h)	785	727	1014	827	752	1002	1551			1505		
	2,000		20000	1000	104	(OOE	1001			1000		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	78	90	63								
Volume Left	8	52	0	9								
Volume Right	2	22	55	2								
cSH	806	864	1551	1505								
Volume to Capacity	0.01	0.09	0.00	0.01								
Queue Length 95th (ft)		7	.0	- 0								
Control Delay (s)	9.5	9.6	0.0	1,1								
Lane LOS	A	A		A								
Approach Delay (s)	9.5	9.6	0.0	1,1								
Approach LOS	A	A										
Intersection Summary												
Average Delay			3.8									
Intersection Capacity U	tilizati	on	21.0%	Ī	CU Lev	el of Se	ervice		A			
Analysis Period (min)	THE REAL PROPERTY.	19801	15	10	No. A PERSON	1112	10.555505		300			



Analysis Period (min)

scenario 4 and 5 (access A+B, B+C) 21: SR 4 & Angel Oaks Dr 6/10/2005 4 * EBT EBR WEL WET NBL NBR Movement Lane Configurations + 7 Sign Control Free Stop Grade 0% 0% 0% Volume (veh/h) 148 219 36 30 39 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 238 39 24 Hourly flow rate (vph) 161 Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (ft) pX, platoon unblocked 447 vC, conflicting volume 277 238 vC1, stage 1 conf vol vC2, stage 2 conf vol 277 447 238 vCu, unblocked vol tC, single (s) 4.1 6.4 6.2 tC, 2 stage (s) tF(s) 2.2 3.5 3.3 pO queue free % 98 94 95 cM capacity (veh/h) 1286 559 801 Direction, Lane # EB 1 EB 2 WB 1 WB 2 NB 1 NB 2 Volume Total 238 39 24 161 33 42 Volume Left 0 0 24 0 33 0 Volume Right n 39 n n 42 n eSH. 17.00 1700 1286 1700 559 801 0.05 Volume to Capacity 0.14 0.02 0.02 0.09 0.06 Queue Length 95th (ft) n n 1 n 5 4 Control Delay (s) 0.0 0.0 7.9 0.0 11.8 9,7 Lane LOS A В A Approach Delay (s) 0.0 1.0 10.7 Approach LOS В Intersection Summary Average Delay 1.8 Intersection Capacity Utilization 2% ICU Level of Service

15



c Critical Lane Group

scenario 4 and 5 (access A+B, B+C) 6/10/2005 12: SR 4 & SR 49 ٩ t 4 NBT EBL EBR NBL SBT SBR Movement Lane Configurations Ideal Flow (vphpl) 1900 1900 1900 1900 1900 1900 Total Lost time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Lane Util, Factor 1.00 1.00 1.00 1.00 1:00 1.00 Frt 1.00 0.85 1.00 0.85 1.00 1.00 Fit Protected 0.95 1.00 0.95 1.00 1.00 1.00 Satd, Flow (prot) 1770 1583 1770 1863 1863 1583 0.95 FIt Permitted 1.00 0.95 1.00 1.00 1.00 1770 1863 Satd. Flow (perm) 1583 1770 1863 1583 Volume (vph) 68 192 67 429 550 78 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 466 Adj. Flow (vph) 209 73 598 85 RTOR Reduction (vph) 176 0 0 0 40 466 598 45 Lane Group Flow (vph) 74 73 33 Turn Type Prot Prot Perm Protected Phases 5 Permitted Phases 6 Actuated Green, G (s) 7.8 7.8 3.4 33.1 25.7 25.7 Effective Green, g (s) 7.8 7.8 3.4 33.1 25.7 25.7 0.68 Actuated g/C Ratio 0.16 0.16 0.07 0.53 0.53 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 282 253 123 1261 979 832 ws Ratio Prot 0.02 00.04 0.04 0.25 60.32 ws Ratio Perm 0.03 v/c Ratio 0.26 0.13 0.59 0.37 0.61 0.05 Uniform Delay, d1 18.0 17.6 22.1 3.4 8.1 5.7 Progression Factor 1,00 1.00 1.00 1.00 1.00 1,00 Incremental Delay, d2 0.5 0.2 7.5 0.2 1.1 0.0 Delay (s) 18,5 17.9 29.6 3.6 9.2 5.7 Level of Service В B A C A A 8.8 Approach Delay (s) 18.0 7.1 Approach LOS В A A Intersection Summary HCM Average Control Delay 9.9 HCM Level of Service A HCM Volume to Capacity ratio 0.54 12.0 Actuated Cycle Length (s) 48.9 Sum of lost time (s) 47.5% Intersection Capacity Utilization ICU Level of Service A Analysis Period (min) 15



scenario 4 and 5 (access A+B, B+C) 14: Murphys Grade & SR 49 6/10/2005 t EBT EBR WEL WBT NBL NBT EBL WBR NBR SBL SBT SBR Movement Lane Configurations 4 1 1 Ideal Flow (vphpl) 1980 1900 1900 1900 1900 1900 1900 1900 1900 4.0 Total Lost time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Lane Util, Factor 1.00 1.00 1,00 1.00 1.00 1.00 1.00 1.00 Fit 0.97 1.00 0.86 1.00 0.99 1.00 1.00 0.85 Fit Protected 0.99 0.95 1.00 0.95 1.00 0.95 1.00 1.00 Satd. Flow (prot) 1782 1770 1605 1770 1845 1770 1863 1583 FIt Permitted 0.99 1.00 1.00 0.95 1.00 0.95 0.95 1.00 Satd. Flow (perm) 1782 1845 1770 1605 1770 1770 1863 1583 240 470 Volume (vph) 10 50 10 120 307 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 54 130 334 261 Adj. Flow (vph) 11 11 5 22 511 2 RTOR Reduction (vph) n 5 n n 116 n n 2 n n n Lane Group Flow (vph) 54 0 261 3 Prot Turn Type Split Split Prot Perm Protected Phases Permitted Phases 6 Actuated Green, G (s) 6.1 0.6 21.9 12.3 33.6 33.6 Effective Green, g (s) 1.1 6.1 6.1 0.6 21.9 12.3 33.6 33.6 Actuated g/C Ratio 0.02 0.59 0.110.11 0.01 0.38 0.21 0.59 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 3.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 34 188 171 19 704 379 1091 927 ws Ratio Prot 00.01 60.03 0.02 0.00 0.19 cO.15 60.27 v/s Ratio Perm 0.00 0.47 0.29 0.26 0.50 0.69 0.47 0.00 w/c Ratio 0.15 Uniform Delay, d1 27.9 23.6 23.3 28.2 13.6 20.8 6.8 4.9 1.00 1.00 1.00 1.00 Progression Factor 1.00 1.00 1.00 1.00 Incremental Delay, d2 10.0 0.8 0.4 7.3 0.6 5.1 0.3 0.0 37.9 24.5 23.7 35.5 14.1 25.9 4.9 Delay (s) 7.1 Level of Service D C C D B C A A Approach Delay (s) 37.9 23.9 14.4 13.4 Approach LOS D C В В Intersection Summary HCM Average Control Delay 15.6 HCM Level of Service B HCM Volume to Capacity ratio 0.49 57.4 Sum of lost time (s) 12.0 Actuated Cycle Length (s) 49.4% Intersection Capacity Utilization ICU Level of Service Analysis Period (min) 15 Critical Lane Group



scenario 4 and 5 (access A+B, B+C) ewopone.

	٠	`	4	Ť	1	4	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	¥		7	+	15		
Sign Control	Stop		10.0	Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	41	35	24	518	629	93	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	45	38	26	563	684	101	
Pedestrians	397.5	1000	-77.7	7,77	27.0	118/10	
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
C, conflicting volume		734	785				
vC1, stage 1 confivol	100.00711	- Software	2000				
vC2, stage 2 conf vol							
A STATE OF THE PARTY OF THE PAR	1349	734	785				
tC, single (s)	6.4	6.2	4.1				
tC, 2 stage (s)	20.000.00		V.00.00				
tF (s)	3.5	3.3	2.2				
pO queue free %	72	91	97				
cM capacity (veh/h)	161	420	834				
Direction, Lane#	EB 1	NB.1	NB 2	SB 1			
Volume Total	83	26	563	785			
Volume Left	45	26	.0	0			
Volume Right	38	0	. 0	101			
cSH	225	834	1700	1700			
Volume to Capacity	0.37	0.03	0.33	0.46			
Queue Length 95th (ff	40	2	.0	0			
Control Delay (s)	30.1	9.5	0.0	0.0			
Lane LOS	D	A					
Approach Delay (s)	30.1	0.4		0.0			
Approach LOS	D						
Intersection Summary							
Average Delay			1.9				
Intersection Capacity U	Itilizati	on	49.8%	- 10	CU Levi	el of Service	A
Analysis Period (min)			15				

scenario 6 (access A+B+C) 6/10/2005 28: Stockton Rd & Angel Oaks Dr EBL EBT EBR WBL WET WBR NBL NBT NBR SBT SBR Movement Lane Configurations 4 4 4 Sign Control Stop Stop Free Free Grade 0% 0% 0% 0% Volume (veh/h) 4 20 32 48 0.92 0.92 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Hourly flow rate (vph) 8 52 0 35 55 52 2 Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type None None Median storage veh) Upstream signal (ft) pX, platoon unblocked vC, conflicting volume 157 181 136 134 62 54 90 vC1, stage 1 confivol vC2, stage 2 confivol 90 vCu, unblocked vol 157 161 53 136 134 62 54 tC, single (s) 7.1 6.5 6.2 7.1 6.5 8.2 4.1 4.1 tC, 2 stage (s) tF (s) 3.5 4.0 3.3 3.5 4.0 3.3 2.2 2.2 pO queue free % 99 100 100 94 99 98 100 99 1002 cM capacity (veh/h) 785 727 1014 827 752 1551 1505 EB 1 WB 1 NB 1 SB 1 Direction, Lane# Volume Total 12 78 90 63 9 Volume Left 8 52 n Volume Right 2 22 55 cSH 808 864 1551 1505 Volume to Capacity 0.01 0.09 0.00 0.01 Queue Length 95th (ft) 0 0 1 7 Control Delay (s) 9.5 9.6 0.0 1.1 Lane LOS A A A 9.5 0.0 Approach Delay (s) 9.6 1,1 Approach LOS A A Intersection Summary Average Delay 3.8 Intersection Capacity Utilization 0% ICU Level of Service Analysis Period (min) 15



scenario 6 (access A+B+C) 21: SR 4 & Angel Oaks Dr

6/10/2005

		•	1		4	7	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	+	7	ħ	+	7	F	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	219	36	22	148	30	39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	238	39	24	161	33	42	
Pedestrians	1,400,000	00,400		2000	100	Wei	
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
C, conflicting volume			277		447	238	
vC1, stage 1 confivol						NAS-ROG	
vC2, stage 2 conf vol							
vCu, unblocked vol			277		447	238	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3,3	
pO queue free %			98		94	95	
cM capacity (veh/h)			1286		559	801	
Direction, Lane#	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	
Volume Total	238	39	24	161	33	42	
Volume Left	0	0	24	0	33	0	
Volume Right	0	. 39	0	0	0	42	
cSH	1700	1700	1286	1700	559	801	
Volume to Capacity	0.14	0.02	0.02	0.09	0.06	0.05	
Queue Length 95th (ft)	0	0	1	0	5	4	
Control Delay (s)	0.0	0.0	7.9	0.0	11.8	9.7	
Lane LOS			Α		В	A	
Approach Delay (s)	0.0		1.0		10.7		
Approach LOS					В		
Intersection Summary							
Average Delay			1.8				
Intersection Capacity U	tilizati	on	28.2%	- 1	CU Lev	el of Service	A
Analysis Period (min)			15				



12: SR 4 & SR 49								0.1172.111111.0010
	*	~	4	Ť	ţ	4		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	ħ	1	- 1		+	T.		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Fit	1.00	0.85	1.00	1.00	1.00	0.85		
Fit Protected	0.95	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583		
FIt Permitted	0.95	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583		
Volume (vph)	68	192	67	429	550	78		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	74	209	73	466	598	85		
RTOR Reduction (vph)		176	0	0	0	40		
Lane Group Flow (vph)		33	73	466	598	45		
Turn Type		Prot	Prot	100		Perm		
Protected Phases	4	4	- 5	2	8	0.4300		
Permitted Phases	17	1/1			Š	6		
Actuated Green, G (s)	7.8	7.8	3.4	33.1	25.7	25.7		
Effective Green, g (s)	7.8	7.8	3.4	33.1	25.7	25.7		
Actuated g/C Ratio	0.16	0.16	0.07	0.88	0.53	0.53		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	282	253	123	1261	979	832		
v/s Ratio Prot	c0.04	0.02	00.04	0.25	2000	032		
v/s Ratio Perm	00,04	0.02	W.04	0.23	00.52	0.03		
v/c Ratio	0.26	0.13	0.59	0.37	0.61	0.05		
We hallo Uniform Delay, d1	18.0	17.6	22.1	3.4	8.1	5:7		
			The second second	1.00	The second second	CAPTER STAFF		
Progression Factor	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2	0.5	0.2	7.5	0.2	1.1	0.0		
Delay (s)	18.5	17.9	29.6	3.6	9.2	5.7		
Level of Service	#O.0	В	С	A	A	A		
Approach Delay (s)	18.0 B			7.1 A	8.8 A			
Approach LOS	.0			: SH	95			
Intersection Summary	Dather		0.0	- 13	TALL I		- X	
HCM Average Control		EW	9.9	108	1UM Le	vel of Service	ъA.	
HCM Volume to Capac		9	0.54		S		40.0	
Actuated Cycle Length		1829 V	48.9			lost time (s)	12.0	
Intersection Capacity L Analysis Period (min)	mizati	on	47.5% 15	19	CO Lev	el of Service	.A	



	-	77300	00480		ŧ	- 2	36205		728	į.	4	1
	£	1000	*	1	200		-	T	-	•	3.00	•
Movement	EBL	EBT	EBR	WBL	WET	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		4		7	1		7	1:		7		1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97		1.00	0.86		1.00	0.99		1.00	1.00	0.85
FIt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1782		1770	1605		1770	1845		1770	1863	1583
FIt Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1782		1770	1605		1770	1845		1770	1863	1583
Volume (vph)	5	10	- 5	50	10	120	5	307	20	240	470	- 5
Peak-hour factor, PHF	_	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	11	5	54	11	130	5	334	22	261	511	5
RTOR Reduction (vph)	0	5	97	0	116	0	0	2	-0	0	0	
Lane Group Flow (vph)		16	o.	54	25	0	5	354	0	261	511	3
Turn Type	Split			Split			Prot			Prot	-511	Perm
Protected Phases	4	4		8	8		5	2		1	- 6	er.em
Permitted Phases	2178	7.0		- 3	100		9	-				6
Actuated Green, G (s)		1.1		6.1	6.1		0.6	21.9		12.3	33.6	33.6
Effective Green, g (s)		1.1		6.1	6.1		0.6	21.9		12.3	33.6	33.6
Actuated g/C Ratio		0.02		0.11	0.11		0.01	0.38		0.21	0.59	0.59
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3,0
A STATE OF THE PARTY OF THE PAR		34		188	171		19	704			1091	927
Lane Grp Cap (vph) w/s Ratio Prot		00.01		00.03	0.02		0.00	- Table 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		and the second second	THE RESERVE OF THE PARTY OF THE	927
		00.01		00.03	0.02		0.00	0.19		c0.15	o0.27	0.00
Ws Ratio Perm		0.47		0.00	O IF		0.00	0.50		0.00	0.47	0.00
w/c Ratio		-		0.29	0.15		0.26			0.69	0.47	0.00
Uniform Delay, d1		27.9		23.6	23.3		28.2	13.8		20.8	6.8	4,9
Progression Factor		1.00		1.00	1,00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		10.0		0.8	0.4		7.3	0.8		5.1	0.3	0.0
Delay (s)		37.9		24.5	23.7 C		35.5 D	14.1		25,9	7.1	4,9
Level of Service		D		C			U	В		С	A	Α
Approach Delay (s) Approach LOS		37.9 D			23,9 C			14.4 B			13.4 B	
								8				
Intersection Summary			conducts.		vol. a. v. a. v.		en en voere					
HCM Average Control [15.8		ICM Le	vel of S	ervice		В			
HCM Volume to Capac		0	0.49				CLOSE O					
Actuated Cycle Length	CASE SALES		57.4		And a regarding facility forces in the co	lost tim	- 0.0.		12.0			
Intersection Capacity U	tilizati	on	49.4%	- 1	CU Lev	el of Se	rvice		A	7		
Analysis Period (min)			15									
 Critical Lane Group 	100											



		988	4	1	i i	J	
		3.7	16.865	10	200	20 .	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	A	36.35	7	•	1		
Sign Control	Stop			Free	Free		
Grade	0%			0.%	0%		
Volume (veh/h)	36	30	21	518	629	84	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	39	33	23	563	684	91	
Pedestrians			(00)0000	1000-00	381900		
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)	21/002/12/						
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume		729	775				
vC1, stage 1 confivol	n derend	0.5000	100.00				
vC2, stage 2 conf vol							
The second secon	1338	729	775				
tC, single (s)	6.4	6.2	4.1				
tC, 2 stage (s)	- 50	100000	0.0				
tF (s)	3.5	3.3	2.2				
pO queue free %	76	92	97				
oM capacity (veh/h)	164	423	841				
		1000	NB 2	SB 1			
Direction, Lane #	EB 1	NB 1					
Volume Total	72	23	563	775			
Volume Left	39	23	0	0 91			
Volume Right	33	0	- March 1997	100			
cSH	227	841	1700	1700			
Volume to Capacity	0.32	0.03	0.33	0.46			
Queue Length 95th (ft)		2	0	0			
Control Delay (s)	28.0	9.4	0.0	0.0			
Lane LOS	D	A		0.0			
Approach Delay (s)	28.0	0.4		0.0			
Approach LOS	D						
Intersection Summary							
Average Delay			1.6				
Intersection Capacity U	Itilizati	on	48.7%	11	CH Lew	el of Service	A



Year 2025 Scenarios (scenario listed in upper left corner on calculation sheet output).



	*	-	•	1	*	4	4	Ť	-	4	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		1188	4	11-011		4	11211		4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2	2	48	4	20	0	32	51	8	48	- 2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	4	4	92	8	38	0	61	98	15	92	- 4
Pedestrians	36.0	- 100	100	101.000			0.00	1814	(5) 114	1973	100	
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)					1007							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	276	283	94	240	236	110	96			159		
vC1, stage 1 conf vol	3000000											
vC2, stage 2 conf vol												
vCu, unblocked vol	276	283	94	240	236	110	96			159		
tC, single (s)	7.1	6,5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	0.7000					0.00				20.000		
tF (s)	3.5	4.0	3.3	3.5	4.0	3,3	2.2			2.2		
pO queue free %	98	99	100	87	99	96	100			99		
cM capacity (veh/h)	637	619	963	702	657	943	1498			1421		
Direction, Lane#	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	138	159	111								
Volume Left	13	92	0.	15								
Volume Right	4	38	98	4								
cSH	675	753	1498	1421								
Volume to Capacity	0.03	0.18	0.00	0.01								
Queue Length 95th (ft)	2	17	0	1								
Control Delay (s)	10.5	10.9	0.0	1.1								
Lane LOS	В	В		A								
Approach Delay (s)	10.5	10.9	0.0	1.1								
Approach LOS	В	B										
Intersection Summary			10000									,
Average Delay			4.3									
Intersection Capacity U	tilizati	on	32.0%	l l	CU Lev	el of Se	rvice		A			
Analysis Period (min)			15									



scenario 1 (access A) year 2025

6/10/2005

		`	1	-	4	*	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	+	7	ħ	+	ħ	7	
Sign Control	Free	2.9		Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	219	36	22	148	30	39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	419	69	42	283	57	75	
Pedestrians		15.0		- 5000	70.	1.50	
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage veh)							
Upstream signal (ff)							
pX, platoon unblocked							
vC, conflicting volume			488		786	419	
vC1, stage 1 conf vol					700	0.000.00	
vC2, stage 2 conf vol							
vCu, unblocked vol			488		786	419	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)			17.0		1000	19.2	
tF (s)			2.2		3.5	3.3	
pO queue free %			96	i i	83	88	
oM capacity (veh/h)			1075		347	634	
State of the state	ED.	ED 0	1000000	Min o	100	17.520	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	
Volume Total	419	69	42	283	57	75	
Volume Left	0	0	42	0	57	0	
Volume Right	0	69	0	0	0	75	
eSH	1700	17.00	1075	1700	347	634	
Volume to Capacity	0.25	0.04	0.04	0.17	0.17	0,12	
Queue Length 95th (ff)		.0	3	0	15	10	
Control Delay (s)	0.0	0.0	8,5	0.0	17.4	11.4	
Lane LOS	122		Α		С	В	
Approach Delay (s)	0.0		1.1		14.0		
Approach LOS					В		
Intersection Summary							
Average Delay			2.3				
Intersection Capacity U	Itilizati	on	37.0%) 1	CU Lev	el of Service	A
Analysis Period (min)			15				



		10-1-10	~	6	-	•	4	: *	-	-	1	1
W	551		enn	Takken .	MARK	lame.	1000	NET		661	664	000
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	44	_ t		77		ľ	77	11	ľ	77	, t	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util, Factor	0.97	1.00	1.00	0.97	1.00	1,00	0,97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
FIt Protected	0.95	1.00	1.00	0.95	1.00	1,00	0,95	1.00	1.00	0.95	1.00	1.00
The first of the f	3433	1863	1583	3433	1863	1583	3433	3539	1583	3433	1863	1583
FIt Permitted	0.95	1.00	1.00	0.55	1.00	1,00	0,95	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1986	1863	1583	3433	3539	1583	1814	1863	1583
Volume (vph)	442	325	294	300	335	395	294	395	300	395	525	175
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	480	353	320	326	364	429	320	429	326	429	571	190
RTOR Reduction (vph)	0	0	218	. 0	0	191	0	0	174	0	0	129
Lane Group Flow (vph)	480	353	104	326	364	238	320	429	152	429	571	61
Turn Type	Split	- 0	ustom	Perm		Perm	Prot		Perm	Perm		Perm
Protected Phases	4	4	4	0155544	8		5	2	VV.575-744	THE SHIP	8	The second
Permitted Phases		41-000	4	8		8		Samuel Control	2	- 6		ė
Actuated Green, G (s)	18.0	18.0	18.0	18.0	18.0	18.0	9.0	41.8	41.8	28.8	28.8	28.8
Effective Green, g (s)	18.0	18.0	18.0	18.0	18.0	18.0	9.0	41.8	41.8	28.8	28.8	28.8
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.47	0.47	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	688	373	317	398	373	317	344	1647	737	582	597	508
v/s Ratio Prot	0.14	c0.19	0.07	5-24-590	e0.20	- Minary	∞0.09	0.12	0.000	- William	60.31	CONTRACT
v/s Ratio Perm				0.16		0.15			0.10	0.24		0.04
w/c Ratio	0.70	0.95	0.33	0.82	0.98	0.75	0.93	0.26	0.21	0.74	0.96	0.12
Uniform Delay, d1	33.4	35.4	30,7	34.3	35.7	33.8	40.1	14.6	14.2	27.1	29.9	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	32.7	0.6	12.4	39.8	9.6	31.1	0.1	0.1	4.8	26.1	0.1
Delay (s)	36.5	68.1	31.3	46.7	75.5	43.4	71.2	14.7	14.3	32.0	56.0	21.7
Level of Service	D	E	Ĉ	D	E	D	E	В	В	C	E	- 0
Approach Delay (s)	VARA	44.7	5.74		54.8	1,000	-	31.4		Control of the Control	41.9	
Approach LOS		D			D			C			D	
Intersection Summary								-				
HCM Average Control Delay 43.3				Ť	ICM Le	vel of S	Service	D				
HCM Volume to Capacity ratio 0.95			- 2	na fishionam non		econii T		- 170				
Actuated Cycle Length (s) 89.8				Š	Sum of	lost tim	e (s)		16.0			
Intersection Capacity U		on	79.6%			el of Se		Ď				
Analysis Period (min) 15												



scenario 1 (access A) year 2025 6/10/2005 14: Murphys Grade & SR 49 t NBT SBT NBL SBR Lane Configurations 4 1900 Ideal Flow (vphpl) 1900 1900 1900 1900 1900 1900 1900 1900 40 40 40 40 40 Total Lost time (s) 4.0 40 40 Lane Util, Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Frt 0.97 1.00 0.86 1.00 0.99 1.00 1.00 0.85 FIt Protected 0.99 0.95 1.00 0.95 1.00 0.95 1,00 1.00 Satd. Flow (prot) 1782 1770 1597 1770 1836 1770 1863 1583 1.00 0.99 0.95 0.95 1.00 Flt Permitted 0.95 1.00 1.00 Satd. Flow (perm) 1782 1770 1597 1770 1836 1770 1863 1583 650 800 Volume (vph) 10 50 10 200 5 70 290 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Peak-hour factor, PHF 0.92 Adj. Flow (vph) 54 315 870 5 11 217 707 76 RTOR Reduction (vph) 5 0 0 190 0 0 4 0 0 0 2 Lane Group Flow (vph) 16 0 54 38 0 5 779 0 315 870 3 Turn Type Split Split Prot Prot Perm Protected Phases Permitted Phases 6 Actuated Green, G (s) 0.6 23.7 12.2 35.3 35.3 1.2 7.7 7.7 Effective Green, g (s) 1.2 7.7 7.7 12.2 35.3 35.3 0.6 23.7 Actuated g/C Ratio 0.02 0.13 0.13 0.01 0.39 0.20 0.58 0.58 Clearance Time (s) 4.0 4.0 40 4.0 4.0 4.0 40 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 35 224 716 202 17 355 1082 919 ws Ratio Prot 0.01 60.03 0.02 0.00 c0.42 c0.18 0.47 ws Ratio Perm 0.00 0.24 0.19 0.29 0.89 0.80 w/c Ratio 1.09 0.00 Uniform Delay, d1 29.5 23.9 23.8 29.9 18.5 23.6 10.0 5.4 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Progression Factor 1.00 Incremental Delay, d2 9.3 0.6 0.5 9.4 60.2 22.4 4.4 0.0 39.3 5.4 24.5 24.2 48.0 14.5 Delay (s) 38.8 78.8 Level of Service D C C D E D В Approach Delay (s) 38.8 24.3 78.5 22.8 Approach LOS D C E C Intersection Summary HCM Average Control Delay 42.4 HCM Level of Service D 0.87 HCM Volume to Capacity ratio 60.8 Sum of lost time (s) 16.0 Actuated Cycle Length (s) Intersection Capacity Utilization 77.4% ICU Level of Service Analysis Period (min) 15 c Critical Lane Group



		8	897	Ť	Ţ	4		
	8-52		-36		*	Sit		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	Y		7		1			
Sign Control	Stop			Free	Free			
Grade	0%			0.%	0%	1000		
Volume (veh/h)	32	27	19	518	629	75		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	61	52	36	991	1203	143		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type	None							
Median storage veh)								
Upstream signal (ft)								
pX, platoon unblocked		200.0200.00						
vC, conflicting volume	2339	1275	1347					
vC1, stage 1 confivol								
vC2, stage 2 conf vol								
vCu, unblocked vol	2339	1275	1347					
tC, single (s)	6.4	6.2	4.1					
tC, 2 stage (s)		-						
tF (s)	3.5	3,3	2.2					
pO queue free %	0	75	93					
oM capacity (veh/h)	37	204	511					
Direction, Lane#	EB 1	NB 1	NB 2	SB 1				
Volume Total	113	36	991	1347				
Volume Left	61	36	0	0				
Volume Right	52	0	0	143				
cSH	60	511	1700	1700				
Volume to Capacity	1.89	0.07	0.58	0.79				
Queue Length 95th (ff	266	6	0	0				
Control Delay (s)	569,1	12.6	0.0	0.0				
Lane LOS	F	В		220400240				
Approach Delay (s)	569,1	0.4		0.0				
Approach LOS	E							
Intersection Summary			- Work					
Average Delay			26.0					
Intersection Capacity U	Itilizati	on	79.0%	0.6	CU Lew	el of Service	D	



scenario 2 (access B) year 2025 6/10/2005 28: Stockton Rd & Angel Oaks Dr t EBL EBT EBR WBL WET WBR NBT Movement NBL NBR SBL SBT SBR Lane Configurations 4 4 4 4 Sign Control Stop Stop Free Free 0% Grade 0% 0% 0% Volume (veh/h) 32 48 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Hourly flow rate (vph) 13 4 4 92 8 38 0 61 98 15 92 Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type None None Median storage veh) Upstream signal (ft) pX, platoon unblocked 240 vC, conflicting volume 276 283 94 236 110 96 159 vC1, stage 1 conf vol vC2, stage 2 confivol vCu, unblocked vol 276 283 94 240 236 110 96 159 4.1 tC, single (s) 4.1 7.1 6,5 6,2 7.1 6.5 6.2 tC, 2 stage (s) tF(s) 3.5 4.0 3.3 3.5 4.0 3.3 22 2.2 pO queue free % 98 99 100 87 99 96 100 99 cM capacity (veh/h) 637 619 963 702 657 943 1498 1421 Direction, Lane # EB 1 WB 1 NB 1 SB 1 Volume Total 21 138 159 111 Volume Left 13 92 0 15 Volume Right 4 38 98 oSH. 675 753 1498 1421 Volume to Capacity 0.03 0.18 0.00 0.01 Queue Length 95th (ft) 17 0 2 1 Control Delay (s) 10.5 0.0 10,9 1.1 Lane LOS В В A Approach Delay (s) 10.5 10,9 0.0 1.1 Approach LOS B B Intersection Summary Average Delay 4.3 Intersection Capacity Utilization 32.0% ICU Level of Service Analysis Period (min) 15



scenario 2 (access B) year 2025 21: SR 4 & Angel Oaks Dr

6/10/2005

	-	*	1	3,000	*	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	+	1	7	+	T T	7	
Sign Control	Free			Free	Stop		
Grade	0 %			0%	0.%		
Volume (veh/h)	219	36	. 22	148	30	39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph) Pedestrians	419	69	42	283	57	75	
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume			488		786	419	
vC1, stage 1 conf vol							
vC2, stage 2 confivol							
vCu, unblocked vol			488		786	419	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)							
tF (s)			2.2		3,5	3.3	
pO queue free %			96		83	88	
cM capacity (veh/h)			1075		347	634	
Direction, Lane#	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	
Volume Total	419	69	42	283	57	75	
Volume Left	0	0	42	0	57	0	
Volume Right	. 0	69	0	0	0	75	
cSH	1700	1700	1075	1700	347	634	
Volume to Capacity	0,25	0.04	0.04	0.17	0.17	0.12	
Queue Length 95th (ft)	0	0	3	0	15	10	
Control Delay (s)	0.0	0.0	8.5	0.0	17.4	11.4	
Lane LOS			A		C	B	
Approach Delay (s)	0.0		1,1		14.0		
Approach LOS					В		
Intersection Summary							
Average Delay			2.3				
Intersection Capacity U	tilizati	on	37.0%	- 31	CU Lev	el of Service	A
Analysis Period (min)			15				



scenario 2 (access B) year 2025

	*	-	•	1	-	•	*	†	1	*	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	44	+	1	77		7	44	44	1	144	*	- 1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util, Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
FIt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd, Flow (prot)	3433	1863	1583	3433	1863	1583	3433	3539	1583	3433	1863	1583
FIt Permitted	0.95	1.00	1.00	0.55	1.00	1.00	0.95	1.00	1.00	0.50	1.00	1.00
Satd, Flow (perm)	3433	1863	1583	1986	1863	1583	3433	3539	1583	1814	1863	1583
Volume (vph)	442	325	294	300	335	395	294	395	300	395	525	175
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	480	353	320	326	364	429	320	429	326	429	571	190
RTOR Reduction (vph)	0	0	216	ō	ō	191	0	0	174	- 0	Ö	129
Lane Group Flow (vph)	THE RESERVE OF THE PARTY OF	353	104	326	364	238	320	429	152	429	571	61
Turn Type	Split		ustom	Perm	277	Perm	Prot		Perm	Perm	-	Perm
Protected Phases	4	4	4	E-E-1110	8	or of time	5	2	F. 5.100	or earn.	- 6	
Permitted Phases	-	75	4	8	- 4	8	Ž,	- 2	:2	6		6
Actuated Green, G (s)	18.0	18.0	18.0	18.0	18.0	18.0	9.0	41.8	41.8	28.8	28.8	28.8
Effective Green, g (s)	18.0	18.0	18.0	18.0	18.0	18.0	9.0	41.8	41.8	28.8	28.8	28.8
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.47	0.47	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	688	373	317	398	373	317	344	1647	737	582	597	508
ws Ratio Prot	0.14	c0.19	0.07	380	60.20	2017	0.09	0.12	-7.57	362	60.31	:000
v/s Ratio Perm	0.14	W, 18	0.07	0.16	00,20	0.15	w.09	0.12	0.10	0.24	00.5.1	0.04
w/c Ratio	0.70	0.95	0.33	0.82	0.98	0.75	0.93	0.26	0.21	0.74	0.96	0.12
Uniform Delay, d1	33.4	35.4	30.7	34.3	35.7	33.8	40.1	14.6	14.2	27.1	29.9	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
The second secon	1111111111		200000	12.4	39.8	9.6	31.1	0.1	0.1	4.8	26.1	0.1
Incremental Delay, d2	36.5	32.7 68.1	31.3	48.7	75.5	43.4	71.2	14.7	14.3	32.0	56.0	21.7
Delay (s)	-	- A TO A T	200	10000	The state of the s	-	A 100 A 100 A	10000	1000	- ALMOND TO	-	75.77
Level of Service	D	E	С)D	54.8	D	E	B	В	C	41.9	С
Approach Delay (s)		44.7						31.4				
Approach LOS		D:			D			ю			D	
Intersection Summary												
HCM Average Control [-	43.3	1	ICM Le	vel of S	ervice		Ð			
HCM Volume to Capac		0	0.95									
Actuated Cycle Length			89.8		and a supplemental and	lost tim			16.0			
Intersection Capacity U	tilizati	on	79.6%	1	CU Lev	el of Se	ervice		D			
Analysis Period (min)			15									



scenario 2 (access B) year 2025

	•	-	*	1	4	*	4	Ť	1	>	Ţ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	5	Ŋ	1		Ŋ	1,		ħ	+	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.00.11.00	4.0	110,000	4.0	4.0	200.00	4.0	4.0	No. of Concession, Name of	4.0	4.0	4.0
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97		1.00	0.86		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd, Flow (prot)		1782		1770	1597		1770	1836		1770	1863	1583
Fit Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1782		1770	1597		1770	1836		1770	1863	1583
Volume (vph)	5	10	- 5	50	10	200	5	650	70	290	800	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	11	5	54	11	217	5	707	76	315	870	5
RTOR Reduction (vph)	0	5	0	0	190	0	0	4	0	0	0	2
Lane Group Flow (vph)		16	0	54	38	0	5	779	0	315	870	3
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)		1.2		7.7	7.7		0.6	23.7		12.2	35.3	35.3
Effective Green, g (s)		1.2		7.7	7.7		0.6	23.7		12.2	35.3	35.3
Actuated g/C Ratio		0.02		0.13	0.13		0.01	0.39		0.20	0.58	0.58
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		35		224	202		17	716		355	1082	919
v/s Ratio Prot		c0:01		60.03	0.02		0.00	60.42		c0.18	0.47	
w/s Ratio Perm												0.00
v/c Ratio		0.46		0.24	0.19		0.29	1.09		0.89	0.80	0.00
Uniform Delay, d1		29.5		23.9	23.8		29.9	18.5		23.6	10.0	5.4
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		9.3		0.6	0.5		9.4	60.2		22.4	4.4	0.0
Delay (s)		38.8		24.5	24.2		39.3	78.8		46.0	14.5	5.4
Level of Service		D		C	C		D	E		D	B	A
Approach Delay (s)		38.8			24.3			78.5			22.8	
Approach LOS		D			C			E			C	
Intersection Summary												
HCM Average Control I	Delay		42.4	H	ICM Le	vel of S	ervice		D			
HCM Volume to Capac	ity ratio	0	0.87									
Actuated Cycle Length	(s)		60.8	9	um of	lost tim	e (s)		16.0			
Intersection Capacity U	tilizati	on	77.4%	j.	CU Lev	el of Se	ervice		D			
Analysis Period (min)			15									



		~	4	1	Ţ	1		
	100	CHOICH T	× 700	-	Toronto.	00000000000000000000000000000000000000		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	¥		7	. +	1			
Sign Control	Stop			Free	Free			
Grade	0%	90000	95029	0%	0%	1000		
Volume (veh/h)	50	44	29	518	629	113		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	96	84	55	991	1203	216		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type	None							
Median storage veh)								
Upstream signal (ft)								
pX, platoon unblocked	K.							
vC, conflicting volume	2413	1311	1419					
vC1, stage 1 conf vol								
vC2, stage 2 confivol								
vCu, unblocked vol	2413	1311	1419					
tC, single (s)	6.4	6.2	4.1					
tC, 2 stage (s)								
tF (s)	3.5	3.3	2.2					
pO queue free %	0	57	88					
cM capacity (veh/h)	32	194	480					
Direction, Lane#	EB 1	NB 1	NB 2	SB 1				
Volume Total	180	55	991	1419				
Volume Left	96	55	0	0				
Volume Right	84	0	0	216				
cSH	-52	480	1700	1700				
Volume to Capacity	3.44	0.12	0.58	0.83				
Queue Length 95th (ft) Em	10	0	0				
Control Delay (s)	Err	13.5	0.0	0.0				
Lane LOS	F	В	1278374	100-00				
Approach Delay (s)	Err	0.7		0.0				
Approach LOS	F	-		1000				
Intersection Summary	}							
Average Delay			679.9					
Intersection Capacity (Hillizati	on.	86.6%	É	CILL end	el of Service	E	



	*		1000	~		4		•			1	1
WWW.danaroun	28.5%.	25000	55.45	(A.V.)	NA SACRAGE	5573	(36)	10	(M-1)	85.1	· T	12.46
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBI
Lane Configurations		4			4			4			4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%		770-000	0%	
Volume (veh/h)	7	2	2	72	4	20	0	44	67	8	61	- 2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	4	- 4	138	8	38	0	84	128	15	117	- 4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	340	362	119	303	299	148	121			212		
vC1, stage 1 conf vol	ACINE	10000	17.100	- 0000	flactor.		1.1142.10			M/10.=		
vC2, stage 2 conf vol												
vCu, unblocked vol	340	362	119	303	299	148	121			212		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	26.197	1018120	-0.00	. 9. 440	0.0000	4.77						
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
pO queue free %	98	99	100	78	99	96	100			99		
cM capacity (veh/h)	578	559	933	638	606	898	1487			1358		
Direction, Lane#	EB 1	WB 1	NB 1	SB 1	the entre	30-04-4	27720000			11/2000 (22/00)		
Volume Total	21	184	212	136								
100 0 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10000	The second second	-									
Volume Left	13	138	128	15 4								
Volume Right				ALC: NO PERSON NAMED IN								
cSH	617	677	1467	1358								
Volume to Capacity	0.03	0.27	0.00	0.01								
Queue Length 95th (ft)	INCOME FOR A	27	0	.1								
Control Delay (s)	11.0	12.3	0.0	0.9								
Lane LOS	В	В	200	A								
Approach Delay (s)	11.0	12.3	0.0	0.9								
Approach LOS	В	В										
Intersection Summary												
Average Delay			4.7									
Intersection Capacity U	tilizati	on	36.4%	1	CU Lev	el of Se	rvice		A			
Analysis Period (min)			15									



scenario 3 (access C) year 2025

	*	-	*	1	- 1 1000 2	4	•	Ť	*	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	101-1-2	4	100000	7	1	- Philade	7	1	Tally or the	7		7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	11/21/24	4.0	0.034000	4.0	4.0	ASSES	4.0	4.0	0.000	4.0	4.0	4.0
Lane Util, Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97		1.00	0.86		1.00	0.99		1.00	1:00	0.85
FIt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1776		1770	1605		1770	1847		1770	1863	1583
FIt Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1776		1770	1605		1770	1847		1770	1863	1583
Volume (vph)	- 5	10	- 5	50	10	120	5	344	20	240	498	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	176%	176%	178%	176%	176%	176%	176%	178%	176%	176%	176%	176%
Adj. Flow (vph)	10	19	10	96	19	230	10	658	38	459	953	10
RTOR Reduction (vph)	0	10	0	0	199	0	0	2	0	0	0	- 4
Lane Group Flow (vph)		29	.0	96	50	0	10	694	0	459	953	6
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	- 6	
Permitted Phases												8
Actuated Green, G (s)		2.7		8.6	8.6		0:7	23.8		12.3	35.4	35.4
Effective Green, g (s)		2.7		8.6	8.6		0.7	23.8		12.3	35.4	35.4
Actuated g/C Ratio		0.04		0.14	0.14		0.01	0.38		0.19	0.56	0.58
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		76		240	218		20	693		343	1040	884
v/s Ratio Prot		¢0.02		c0.05	0.03		0.01	0.38		d0.26	c0.51	
v/s Ratio Perm		250,000					ienewik.				Section 1	0.00
w/c Ratio		0.39		0.40	0.23		0.50	1.00		1.34	0.92	0.01
Uniform Delay, d1		29.5		25.0	24.4		31.2	19.8		25.5	12.7	6.2
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.3		1.1	0.5		18.3	34.6		170.7	12.2	0.0
Delay (s)		32.8		26.1	25.0		49.5	54.4		196.2	24.9	6.2
Level of Service		C		C	C		D	D		F	C	A
Approach Delay (s)		32.8		.,,	25.3		574	54.3			80.1	
Approach LOS		C			C			D			F	
Intersection Summary												
HCM Average Control	Delay		64.6	1	ICM Le	vel of S	Service		E			1
HCM Volume to Capac	ity rati	0	0.88									
Actuated Cycle Length	(s)		63.4		Sum of	lost tim	e (s)		12.0			
Intersection Capacity U	Itilizati	on	81.4%	4	CU Lev	el of Se	ervice		D			
Analysis Period (min)			15									

c Critical Lane Group



	*	-	~		4	4	4	*	*	1	1	1
	E54	es.	enn	(Alex	MARK	tome.	A CPS A	NET		661	664	886
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	77			44		ľ	77	11	ľ	77	, t	000
ldeal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util, Factor	0.97	1.00	1.00	0.97	1.00	1,00	0,97	0.95	1.00	0.97	1,00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.88
Fit Protected	0.95	1.00	1.00	0.95	1.00	1,00	0,95	1.00	1.00	0,95	1.00	1.00
the first of the f	3433	1863	1583	3433	1863	1583	3433	3539	1583	3433	1863	1583
FIt Permitted	0.95	1.00	1.00	0.55	1.00	1,00	0,95	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1986	1863	1583	3433	3539	1583	1814	1863	1583
Volume (vph)	442	325	294	300	335	395	294	395	300	395	525	175
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	480	353	320	326	364	429	320	429	326	429	571	190
RTOR Reduction (vph)	0	0	218	. 0	0	191	0	0	174	0	0	129
Lane Group Flow (vph)	480	353	104	326	364	238	320	429	152	429	571	6
Turn Type	Split	(ustom	Perm		Perm	Prot	-	Perm	Perm		Pern
Protected Phases	4	4	4	VYSSEAA	8		5	2	VV 575-744	JANGE MAIN	8	Ti-end
Permitted Phases		at the second	4	. 8		8		Samuel Control	2	- 6		6
Actuated Green, G (s)	18.0	18.0	18.0	18.0	18.0	18.0	9.0	41.8	41.8	28.8	28.8	28.8
Effective Green, g (s)	18.0	18.0	18.0	18.0	18.0	18.0	9.0	41.8	41.8	28.8	28.8	28.8
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.47	0.47	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	688	373	317	398	373	317	344	1647	737	582	597	508
v/s Ratio Prot	0.14	c0.19	0.07	54500	e0.20	dino	c0.09	0.12	200000	- Contract	60.31	0.000
v/s Ratio Perm				0.16		0.15			0.10	0.24		0.04
v/c Ratio	0.70	0.95	0.33	0.82	0.98	0.75	0.93	0.26	0.21	0.74	0.96	0.12
Uniform Delay, d1	33.4	35.4	30.7	34.3	35.7	33.8	40.1	14.6	14.2	27.1	29.9	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	32.7	0.6	12.4	39.8	9.6	31.1	0.1	0.1	4.8	26.1	0.
Delay (s)	36.5	68.1	31.3	46.7	75.5	43.4	71.2	14.7	14.3	32.0	56.0	21.7
Level of Service	D	E	C	D	E	D	E	В	В	C	E	
Approach Delay (s)	1,700	44.7	- 5	- 7	54.8	1,700	-	31.4		- Control	41.9	
Approach LOS		D			D			C			D	
Intersection Summary					181.5			5024				
HCM Average Control D	Delay		43.3	1	ICM Le	vel of 9	Service		D			
HCM Volume to Capac		0	0.95		ria (Sfiskouri, incl		KOMANA.		- 17			
Actuated Cycle Length		-	89.8	3	Sum of	lost tim	e (s)		16.0			
Intersection Capacity U		on:	79.6%			el of S			D			
The second of th												



Critical Lane Group

scenario 3 (access C) year 2025 6/10/2005 14: Murphys Grade & SR 49 4 t Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Lane Configurations 4 1 1 Ideal Flow (vphpl) 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 Total Lost time (s) 4.0 4.0 4.0 4.0 40 40 40 4.0 Lane Util, Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.86 0.99 0.85 Frt 0.97 1.00 1.00 1.00 1.00 FIt Protected 0.99 0.95 1.00 0.95 1.00 0.95 1.00 1.00 Satd. Flow (prot) 1782 1770 1597 1770 1836 1770 1863 1583 FIt Permitted 0.99 0.95 1.00 0.95 1.00 0.95 1.00 1.00 Satd. Flow (perm) 1782 1770 1597 1770 1836 1770 1863 1583 Volume (vph) 10 50 10 200 650 290 800 5 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 5 Adj. Flow (vph) 5 11 5 54 11 217 5 707 76 315 870 RTOR Reduction (vph) 0 0 0 190 0 0 4 0 0 0 2 n 16 o 54 38 779 315 Lane Group Flow (vph) n 5 n 870 3 Turn Type Split Split Prot Prot Perm 4 Protected Phases 8 8 5 Permitted Phases 6 Actuated Green, G (s) 35.3 1.2 7.7 7.7 0.6 23.7 12.2 35.3 Effective Green, g (s) 1.2 7.7 7.7 0.6 23.7 12.2 35.3 35.3 Actuated g/C Ratio 0.02 0.13 0.13 0.01 0.39 0.20 0.58 0.58 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3,0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 35 224 202 17 716 355 1082 919 v/s Ratio Prot 0.01 c0.03 0.02 0.00 c0.42 c0.18 0.47 0.00 v/s Ratio Perm v/o Ratio 0.46 0.24 0.19 0.29 1.09 0.89 0.80 0.00 Uniform Delay, d1 29.5 23.9 23.8 29.9 18.5 23.6 10.0 5.4 Progression Factor 1.00 1.00 1.00 1,00 1,00 1.00 1.00 1.00 Incremental Delay, d2 9,3 0.6 0.5 9.4 60.2 22.4 4.4 0.0 39.3 46.0 14.5 Delay (s) 38.8 24.5 24.2 78.8 5.4 Level of Service D C C D D В E Approach Delay (s) 38.8 78.5 22.8 24.3 Approach LOS D C E C Intersection Summary HCM Average Control Delay 42.4 HCM Level of Service D HCM Volume to Capacity ratio 0.87 16.0 Actuated Cycle Length (s) 60.8 Sum of lost time (s) Intersection Capacity Utilization 77.4% ICU Level of Service Analysis Period (min) 15



scenario 3 (access C) year 2025 6/10/2005 25: mrk twain & SR 49 t Movement NBL NBT SBT SBR Lane Configurations 1 Stop Sign Control Free Free Grade 0% 0% 0% Volume (veh/h) 22 528 649 55 0.92 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 Hourly flow rate (vph) 42 33 1010 1242 Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (ft) pX, platoon unblocked vC, conflicting volume 2358 1294 1347 vC1, stage 1 conf vol vC2, stage 2 conf vol 2358 1294 1347 vCu, unblocked vol tC, single (s) 6.4 6.2 4.1 tC, 2 stage (s) 3.5 3.3 2.2 tF (s) pO queue free % 0 84 95 511 cM capacity (veh/h) 37 199 Direction, Lane# EB 1 NB 1 NB 2 **SB 1** Volume Total 75 27 1010 1347 Volume Left 42 27 O ñ Volume Right 33 0 105 cSH 511 1700 57 1700 Volume to Capacity 1.30 0.05 0.59 0.79 Queue Length 95th (ft) 162 4 0 0 Control Delay (s) 338.3 12.4 0.0 0.0 Lane LOS F B Approach Delay (s) 0.0 338.3 0.3 Approach LOS F Intersection Summary 10.4 Average Delay Intersection Capacity Utilization 76.6% ICU Level of Service Analysis Period (min) 15



28: Stockton Rd & A	nger	Jans L	21:								6/10	
	٨	-	*	1	-	•	1	Ť	1	1	Ť	1
Movement	EBL	EBT	EBR	WBL	WET	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		4			4			4			4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2	2	48	4	20	0	32	51	8	48	- 3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	2	52	4	22	0	35	55	9	52	- 3
Pedestrians					***			3000				
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	157	161	53	136	134	62	54			90		
vC1, stage 1 confivol		1,000	999	112.000	54,000	200				0.000000		
vC2, stage 2 conf vol												
vCu, unblocked vol	157	161	53	136	134	62	54			90		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)				esenti		100.00	1.00					
tF(s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
pO queue free %	99	100	100	94	99	98	100			99		
cM capacity (veh/h)	785	727	1014	827	752	1002	1551			1505		
Direction, Lane#	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	78	90	63								
Volume Left	8	52	0	9								
Volume Right	2	22	55	2								
cSH	806	864	1551	1505								
Volume to Capacity	0.01	0.09	0.00	0.01								
Queue Length 95th (ft)	Control of the last	7	0	0.								
Control Delay (s)	9.5	9.6	0.0	1.1								
Lane LOS	A	A	1,000,000,000	A								
Approach Delay (s)	9.5	9.6	0.0	1.1								
Approach LOS	A	Α	10000000	200.00								
Intersection Summary												
Average Delay			3,8									
Intersection Capacity U	tilizati	on	21.0%	- 1	CU Lev	el of Se	envice		A			
Analysis Period (min)			15									



4 ,5 and 6 (access AB,BC,ABC) year 2025

6/10/2005

	1- -	~	1	-	4	*	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations		7	ħ		ħ	7	
Sign Control	Free	20	- 1	Free	Stop	-	
Grade	0%			0%	0%		
Volume (veh/h)	219	36	22	148	30	39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	238	39	24	161	33	42	
Pedestrians	2000 C	1000	10.000	100000	0.000	0.000V	
ane Width (ft)							
Valking Speed (ft/s)							
ercent Blockage							
Right turn flare (veh)							
Median type					None		
vledian storage veh)							
Jpstream signal (ff)							
X, platoon unblocked							
C, conflicting volume			277		447	238	
C1, stage 1 confivol			74.1		12,220	2000	
C2, stage 2 conf vol							
rCu, unblocked vol			277		447	238	
C, single (s)			4.1		6.4	6.2	
C, 2 stage (s)			1000		11935	133	
F (s)			2.2	1	3.5	3.3	
00 queue free %			98		94	95	
oM capacity (veh/h)			1286		559	801	
	55.4	E0.0	1000	Win o	0.000	10/00/1	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	
/olume Total	238	39	24	161	33	42	
/olume Left	0.	0	24	0	33	0	
/olume Right	0	39	0	0	0	42	
SH	1700	17.00		1700	559	801	
/olume to Capacity	0.14	0.02	0.02	0.09	0.06	0.05	
Queue Length 95th (ft)		0	- 31	0	5	4	
Control Delay (s)	0.0	0.0	7.9	0.0	11.8	9.7	
Lane LOS			A		В	A	
Approach Delay (s)	0.0		1.0		10.7		
Approach LOS					В		
ntersection Summary			1755				
Average Delay	191125000000	96079	1,8		WALKS SA		0/800
ntersection Capacity U	Itilizati	on	28.2%	7 3	CU Lev	el of Service	A



	340		220	8829	A 200 H 1915	- A	5328		3465	. 1168	- 1	
			•	1		39.5		Ť	-	100	*	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	14		1	77	•	ľ	717	14	1	77		7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1,00	0.97	1,00	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
FIt Protected	0.95	1.00	1,00	0.95	1,00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	3539	1583	3433	1863	1583
FIt Permitted	0.95	1.00	1,00	0.55	1,00	1.00	0.95	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1986	1863	1583	3433	3539	1583	1814	1863	1583
Volume (vph)	442	325	254	300	335	395	250	395	300	395	525	175
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	480	353	276	326	364	429	272	429	326	429	571	190
RTOR Reduction (vph)	0	0	216	0	0	191	0	0	174	0	0	129
Lane Group Flow (vph)	480	353	60	326	364	238	272	429	152	429	571	61
Turn Type	Split	-	custom	Perm	-	Perm	Prot	600	Perm	Perm		Perm
Protected Phases	4	4	4		8		- 5	2			- 6	
Permitted Phases			4	8		8			2	6		6
Actuated Green, G (s)	18.0	18.0	18.0	18.0	18.0	18,0	9.0	41.8	41.8	28.8	28.8	28.8
Effective Green, g (s)	18.0	18.0	18.0	18.0	18.0	18.0	9.0	41.8	41.8	28.8	28.8	28.8
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.47	0.47	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3,0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	688	373	317	398	373	317	344	1647	737	582	597	508
w/s Ratio Prot	0.14	c0.19	0.04	a delaction	60.20		c0.08	0.12			d0.31	CONTRACTOR
v/s Ratio Perm				0.16		0.15			0.10	0.24		0.04
v/c Ratio	0.70	0.95	0.19	0.82	0.98	0.75	0.79	0.26	0.21	0.74	0.96	0.12
Uniform Delay, d1	33.4	35.4	29.8	34.3	35.7	33.8	39.5	14.6	14.2	27.1	29.9	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	32.7	0.3	12.4	39.8	9.6	11.7	0.1	0.1	4.8	26.1	0.1
Delay (s)	36.5	68.1	30.1	46.7	75.5	43.4	51.2	14.7	14.3	32.0	56.0	21.7
Level of Service	D	E	С	D	E	D	D	В	В	C	E	C
Approach Delay (s)	1,150	45.0			54.8	1,190		24.2			41.9	
Approach LOS		D			D			С			D	
Intersection Summary												
HCM Average Control	Delay		41.8	F	ICM Le	vel of S	Service		D			
HCM Volume to Capac	ity rati	0	0.94									
Actuated Cycle Length			89.8	9	Sum of	lost tim	e (s)		16.0			
Intersection Capacity U	The second second	on	78.3%		CU Lev	Property Company			D			
Analysis Period (min)			15									



4, 5,6 (AB, BC, ABC) year 2025

	٨	-	*	1	•	4	4	Ť	*	1	ŧ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		4		7	1		7	1		7		- 1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Fit		0.97		1.00	0.86		1.00	0.98		1.00	1.00	0.86
Fit Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1782		1770	1597		1770	1833		1770	1863	1583
FIt Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1782		1770	1597		1770	1833		1770	1863	1583
Volume (vph)	- 5	10	5	- 50	10	200	5	577	70	290	745	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0,92
Adj. Flow (vph)	5	11	5	54	11	217	5	627	76	315	810	ě
RTOR Reduction (vph)	0	5	ő	0	190	0	ő	4	. 0	0	0	2
Lane Group Flow (vph)	0	16	Ö	54	38	0	5	699	0	315	810	3
Turn Type	Split	-10		Split			Prot	. 000		Prot	0.10	Perm
Protected Phases	4	4		8	8		5	2		1	6	Cem
Permitted Phases	-	- 7						- 2		-7/		- 6
Actuated Green, G (s)		1.2		7.7	7.7		0.6	23.7		12.2	35.3	35.3
Effective Green, g (s)		1.2		7.7	7.7		0.6	23.7		12.2	35.3	35.3
Actuated g/C Ratio		0.02		0.13	0.13		0.01	0.39		0.20	0.58	0.58
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
A CONTRACTOR OF THE PROPERTY O		35		224	202		17	7.15			1082	
Lane Grp Cap (vph) v/s Ratio Prot		60.01		c0.03	0.02		0.00	60.38		355	0.43	919
ACCESSATION OF THE PARTY OF THE		0.01		00.03	0.02		0.00	00,38		d0.18	0.43	0.00
v/s Ratio Perm		0.46		0.00	0.30		0.00	0.00		0.00	0.75	0.00
v/c Ratio		29.5		0.24	0.19 23.8		0.29	18.3		0.89	0.75	0.00 5.4
Uniform Delay, d1		The second second		23.9	Action Control of the Party Control		29.9	Adversor Service Services		23.6	9.5	100000000000000000000000000000000000000
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		9.3		0.6	0.5 24.2		9.4	27.7 46.0		22.4	2.9	0.0 5.4
Delay (s)		38.8		24.5			39.3	10000		46.0		0.001
Level of Service		D		С	C		D	D		D	В	F
Approach Delay (s)		38.8			24.3			46.0			21.7	
Approach LOS		D			C			D			C	
Intersection Summary												
HCM Average Control D	elay		30.2	j.	ICM Le	vel of S	ervice		C			
HCM Volume to Capac	ity ratio	0	0.81									
Actuated Cycle Length	(s)		60.8	98	um of	lost tim	e (s)		16.0			
Intersection Capacity U		on	73.6%			el of Se			D			
Analysis Period (min)	SULTIME TO	(A 6)	15	13	CHECK HOLD	CARS ARK	1100000		700			



scenario 4 and 5 (AB, BC) year 2025 25: mrk twain & SR 49 6/10/2005 4 t NBT SBT SBR Movement Lane Configurations 1 Sign Control Stop Free Grade 0% 0% 0% Volume (veh/h) 93 41 518 629 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 Hourly flow rate (vph) 78 67 46 991 178 1203 Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (ft) pX, platoon unblocked vC, conflicting volume 2375 1292 1381 vC1, stage 1 confivol vC2, stage 2 conf vol 2375 1292 1381 vCu, unblocked vol tC, single (s) 6.4 6.2 4.1 tC, 2 stage (s) tF (s) 3.5 3.3 2.2 pO queue free % 0 66 91 cM capacity (veh/h) 35 199 496 Direction, Lane# EB 1 NB 1 NB 2 SB 1 Volume Total 145 48 991 1381 Volume Left 78 46 0 Volume Right 67 0 0 178 cSH 56 496 1700 1700 0.58 Volume to Capacity 2.60 0.09 0.81 Queue Length 95th (ft) 372 8 0 O Control Delay (s) 884.0 13.0 0.0 0.0 Lane LOS F B Approach Delay (s) 884.0 0.6 0.0 Approach LOS F Intersection Summary Average Delay 50.4 Intersection Capacity Utilization 82.6% ICU Level of Service Analysis Period (min) 15



scenario 6 (access ABC) year 2025

6/10/2005

	٨	~	4	Ť	Ţ	1	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	N.		. 7		1		
Sign Control	Stop		- 60	Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	36	30	21	518	629	84	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	69	57	40	991	1203	161	
Pedestrians							
Lane Width (ff)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocke	d						
vC, conflicting volum		1284	1364				
vC1, stage 1 confivol							
vC2, stage 2 confivol							
vCu, unblocked vol	2355	1284	1364				
tC, single (s)	6.4	6.2	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
pO queue free %	0	72	92				
oM capacity (veh/h)	36	201	504				
Direction, Lane#	EB 1	NB 1	NB 2	SB 1			
Volume Total	126	40	991	1364			
Volume Left	69	40	0	0			
Volume Right	57	0	0	161			
cSH	58	504	1700	1700			
Volume to Capacity	2.19	0.08	0.58	0.80			
Queue Length 95th (1	ff) 310	8	0	0			
Control Delay (s)	700.9	12.8	0.0	0.0			
Lane LOS	F	В					
Approach Delay (s)	700.9	0.5		0.0			
Approach LOS	F						
Intersection Summary	1						
Average Delay			35.3				W-002
Intersection Capacity	Utilizati	on	80.6%	- 1	CU Lev	el of Service	D
Analysis Period (min)	3		15		-	The state of the s	

